TOWARDS A SELF-RELIANT ECONOMY

India's Third Plan 1961—66

PLANNING COMMISSION

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India's Third Plan 1961-66

PLANNING COMMISSION

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FOREWORD

In September 1961, when Parliament approved the Third Five Year Plan, India entered upon a new and more intensive phase of economic and social development. India's Third Plan has been conceived as a vital step towards the building up, over the next fifteen years or so, of a self-reliant economy which can meet the essential needs of the people and is capable of moving forward on its own momentum. This demands sustained and widespread effort at every level of national life. Equally, it calls for greater understanding on the part of other nations of India's needs and aspirations and the magnitude of the tasks to be accomplished. Mutual understanding and assistance between nations in grappling with the difficult problems of economic development is itself a major element in the growth of a world community in which each country contributes to the welfare and advance of others in the measure of its capacity.

Four years ago, against the background of India's Second Five Year Plan, the Planning Commission sponsored the publication of a study, *The New India : Progress Through Democracy,* in the belief that it might bring India and her aims and problems closer to the people of other countries. Their interest and appreciation have been of great value to India and we have profited from their experience. The present study, describing the approach and goals of India's plans, especially in relation to her Third Five Year Plan, has been prepared in the hope that it may lead to a

still wider understanding of her problems, which are indeed common to most developing nations, and to greater exchange of experience between India and other countries pursuing the common path of economic development.

G. L. NANDA
Deputy Chairman
Planning Commission, India

CONTENTS

CHAPTER		PAGE
	INTRODUCTION	1
I	THE CONQUEST OF POVERTY	6
II	PACING SOCIAL GAINS WITH ECONOMIC PROGRESS	28
III	INDIA'S FIRST DECADE OF PROGRESS	44
IV	APPROACH TO THE THIRD PLAN	62
V	THE THIRD PLAN IN OUTLINE	80
VI	FINANCING THE PLAN	111
VII	ADMINISTRATIVE PROBLEMS OF DEVELOPMENT ..	141
VIII	EMPLOYMENT AND MANPOWER	151
	THE DEVELOPMENT PROGRAMMES	
IX	AGRICULTURE AND RURAL DEVELOPMENT ..	169
	1. Stepping Up Farm Production	169
	2. Community Development	181
	3. Development of Rural Cooperatives	186
	4. Livestock, Dairying and Fisheries	192
	5. Irrigation	196
	6. Soil Conservation and Forestry	202
	7. Land Reform	206
X	INDUSTRIAL DEVELOPMENT	215
	1. The Large-Scale Industries	215
	2. Village and Small Industries	242
	3. Minerals	247
	4. Scientific and Technological Research ..	253
XI	POWER, TRANSPORT AND COMMUNICATIONS	259
	1. Power Development	259
	2. Transport and Communications .. .	266

CHAPTER PAGE

XII EDUCATION AND THE SOCIAL SERVICES .. 277

1. Education 277
2. Health 287
3. Housing 295
4. Labour Policy 300
5. Welfare Programmes 305

APPENDIX 312

INDEX 313

INTRODUCTION

INDIA, the second largest and most densely populated of the countries of the world, began its first steps towards development just ten years ago as an independent nation.

Today, the changing face of India, its new vitality, contrast sharply with the long stagnation of the past. In this ancient land, so long governed by tradition, the "winds of change" are blowing and affecting not only the dweller in the city but also the peasant in the field.

Some of the changes are easy to see—great power dams feeding power to industries and cities, irrigation systems carrying water to fields once dependent on monsoons, new steel mills going up, new mines being opened, new industries being started with confidence in the growth of India's economy. Production from Indian industries has doubled; ports, highways, railroads are crowded with shipments of steel, iron ore, cement and other goods.

In the villages, India's long isolated rural people are being put in touch for the first time with new ideas and help —roads to connect them to market, fertilizers and improved ploughs for their fields, education for their children. Farm production has gone up over 40 per cent during the past decade.

Nearly 20 million more children are now in school; engineering and agricultural colleges and scientific institutions are bringing new technical knowledge to supplement an ancient learning. Health services have almost conquered malaria, one of India's oldest scourges. Infant mortality and maternal mortality, long among the world's highest, are dropping. Life expectancy has risen from 32 to 47 years.

Yet in a country of so vast a size, with so large a population, diverse in language and customs, ten years of development are but the first steps. India, though on its

way, has still a long road to go to be a "developed" nation able to offer equal opportunities for all its people.

Encouraging as it is, the rate of growth and change is too slow to vitally affect over 430 million people, to alter radically the structure of India's economy, to produce enough food, goods and employment, to replace its old traditional order with a dynamic technologically advanced society, to raise living standards to anything approaching those tolerable in the developed countries. Even today, after ten years of growth, the income per person averages only $69 a year—one of the lowest in the world. And although Indian incomes have been going up, so have those of other countries—fast enough to widen rather than narrow the gap between India and the developed nations.

This year, building on gains already made, India begins its Third Five Year Plan, the first stage in a new period of far faster, more intensive development. Putting in redoubled efforts and resources, India hopes to bring about a tremendous upsurge in growth, to accomplish as much in the next five years as it has in the past ten—and keep up this pace in the years ahead.

The urgent need to speed up India's development, to prepare now for an even faster rate in the future, has been borne home by the very experience, the achievements, of the past ten years as well as by the needs of the future.

In March the new 1961 Census showed that India's population, already very large, is rising faster than estimated even two years ago. While population in some other developing countries—in Latin America for instance—is going up more quickly than in India, India's rate is none the less relatively high and adds about 9 million more people every year. Today India numbers some 438 million. To provide the minimum necessities of life, more employment and somewhat better living standards for a population of this vast size, India must move fast—far faster than over the last ten years, encouraging as progress has been.

At the same time India must also build today for even faster growth in the future. In the next fifteen years, even with a nation-wide family planning programme, it is now expected that India will have some 187 million more people —an increase almost equal to the entire present population of the United States. India must work fast now to lay a "base" today from which more jobs, more goods, more income can come in the future to provide minimum standards of living and employment for this larger population.

India today for the first time can also begin to see and plan for the day when it will become a more self-reliant economy, able to go ahead progressively on its own, able to produce the goods it needs for its development—its schools, roads and hospitals, its power dams and railways and industries—and for creating a better life for its people, chiefly out of its own efforts.

At an early stage of growth this is not possible in a vast under-developed country where most of the people live on the margin of poverty. The aid in grants and loans which has come from friendly countries has greatly assisted India in its growth so far; its significance cannot be overestimated. At the same time, looking ahead to its growing needs of the future, India feels that it must plan now to work itself progressively free of dependence on foreign aid, so that as soon as possible it will be more able, out of its own resources, to fulfil more of the needs of its people.

India's Third Plan, and India's thinking for the future. have all these aims in view. The Third Plan is itself designed to meet, all at the same time, the present needs of its population, to build for the future, and to work towards greater self-reliance.

To achieve these goals will mean over the next five years, and the next fifteen, a tremendous effort, a powerful speeding up of every part of the economy, the most careful planning, heavy investment in the future, renewed sacrifices widely shared.

Yet the experience of these past ten years has brought a conviction that India can look forward to sustained economic progress.

In part this conviction arises from the groundwork already laid, the sizable achievements already made. Among these are the encouraging rise in farm production; the notable rise in industrial production and particularly the ground broken in new and complex industries; the expansion of such basic facilities as power and transport which can support a growing economy; the considerable gains in education, especially technical education, which have already produced sizable corps of men and women trained in the new skills India needs.

In part the conviction that India can go ahead faster arises also from its experience with development itself and with planning ahead for faster growth. Today in India, as in some other developing countries of the world, there is considerably more knowledge of what development involves, what new problems, needs, even conflicts can arise and what are possible and probable targets.

Certainly there is a far clearer view today of what India's potential and necessary lines of development are—the need to concentrate in particular on agriculture, industry and education, which hold the major promise of India's rise out of poverty; the need to concentrate too on efficient management, on productivity to get the utmost returns from steel mills, power plants, irrigation systems.

There is also considerably more familiarity with the problems of growth under pressure and the rising expectations and demands of an economy in a period of dynamic growth. India has learned to expect and adjust to the shortages that arise when pressures and demands are high from every side—shortages of critical equipment and materials, foreign exchange, trained manpower, transport and power. Such shortages, except perhaps during the last war, were almost unknown in India's previous decades of stagnation. Today

they add to the complexities and urgencies of careful planning to ensure balanced and fast development.

In these past years the social problems of developing an old traditional society have been more clearly seen in terms of the new conflicts that may arise in the very process of growth. From the beginning—indeed long before Independence—India's whole approach to development has been to bring about far-reaching social as well as economic changes, to assure more equal social and economic opportunities to its people. Today, with the experience of the past years, India is able to take even more effective measures to assure that the benefits as well as the burdens of development are equally shared.

To change a traditional society, rooted in thousands of years of history, into a dynamic one attuned to the technology of the modern world was, and is, a tremendous task. To do it through peaceful democratic means and by the consent of the people makes this task even more difficult. It was inevitable that India should use these peaceful and democratic means. They are the very methods by which India won its Independence. India has chosen to carry out all its social and economic plans at each point with the support and participation of the people. Although change and progress may thus seem to come at first more slowly, India believes that, by conserving social unity and building upon the principles of freedom, the changes will be more fundamental and more enduring.

The people of India today live on the frontier of a new world which they are helping to build. To cross this frontier, they have to possess courage, enterprise and confidence, for the way ahead is long and hard. Yet with all their burdens and problems, their effort today to pull their country forward in a great national endeavour is part of an inspiring new period of the nation's history.

CHAPTER I

THE CONQUEST OF POVERTY

BEHIND India's Third Five Year Plan, as all its Plans lies a vision of the future—a time when India has conquered the curse of poverty and can assure the masses of the people the opportunity to lead a good life. During the long years of their national struggle for Independence, the Indian people had a similar vision of freedom. It is to redeem that promise in full—to assure freedom from want as well as political freedom—that India in these last ten years and today has deliberately set itself to break with the stagnation of the past and begin the long road to development.

To provide the good life—even a better life—to the 430 million and more people of India is, as we know, a vast undertaking and its achievement is far off.

But surely no lesser goal can be kept in view. Only if the most vigorous steps are taken today can the goal become a reality, and each step taken must be one designed to make that goal nearer and more certain.

To prepare its Third Plan India has taken a look ahead not only over the next five years, but the next fifteen, to lay out a long-range strategy of development and see what targets must be set now, what decisions must be made today.

The Third Plan thus is based on and is part of a long-range strategy, and is a critical phase of a new period of more intensive development. The final goal of this strategy is to raise living standards for more than 430 million people. In a word, it is the conquest of poverty.

The question is : how can India, building on the gains already made, most quickly produce enough and so guide its growth that it can lift its millions further out of poverty ? What are the ways to speed up progress and to narrow the gaps between India and other more advanced nations ? Over

the next five years, the next fifteen and more, every possibility must be explored, every effort mobilized so that the economy can grow rapidly and become more self-reliant in the shortest possible time.

In shaping its Third Five Year Plan, India has taken a long perspective view of this question—studying the progress that has been made so far, the successes and the failures, the new needs and problems—and, above all, India's potential and possible lines of growth.

For India, the conquest of poverty has no short or easy answer. India does not have, as do some under-developed countries, oil or precious minerals or any single rich resource or export crop out of which it can largely pay for development. Nor does it have vast unexplored lands and untapped forests, such as have helped some countries in the past provide ready wealth and resources for their development. India's land area, about one-third that of the U.S., is already opened up and for the most part densely populated. Further India's is an old traditional society, rooted in thousands of years of history. Far-reaching changes in social customs and institutions are necessary—and have been started—to build up a technically advanced society which offers more equal opportunities for all.

The conquest of poverty then cannot come through one or two quick and simple lines of action involving small numbers of people, but through a longer and more complex process involving all the people of India. Every part of its economy—its farms, its factories, its mines and forests—must produce more; all its natural (and its human) resources must be discovered and developed to the full.

Over the Third Five Year Plan, over the next fifteen years and more, however, India must give a particularly strong push to those few priority fields which can most quickly yield the highest increase in key production. Here top priority clearly goes to agriculture.

The Key Role of Agriculture

India is predominantly a rural nation, and will remain so for many years. Nearly half of India's total production comes from agriculture, as compared, say, with 9 per cent in the U.S. or 18 per cent in Japan. Higher crop yields can thus give a substantial boost to national income and make more resources available for development and higher living standards. The rise in farm production so far, though good in itself, is still too slow to meet India's needs. Modernizing Indian agriculture is thus perhaps the most important single key to the fast and widespread economic development of India as a whole.

The possibility of raising farm production very sharply is indeed one of India's greatest potentialities and assets. Crop yields, although they have risen over the past ten years, are still so low (among the lowest in the world) that, if irrigation, fertilizers, improved seeds and implements can be supplied more rapidly and widely than in the past and if more farmers can be educated to use better methods, enormous increases in yields are possible.

India must also develop its agriculture and its rural people for compelling social reasons. About 360 million people, or 80 per cent of all the people in India, live in villages. Most of them depend on farming as a way of life and livelihood. Indeed, the roots of India's poverty lie in its villages. To help India's rural people raise their living standards and build a better life is, therefore, an urgent social as well as economic goal.

While stepping up farm production far more rapidly is possible, it will not be easy. Better farming methods, to be sure, are already spreading—the use of fertilizers, for example, has increased seven-fold in the past ten years. But farmers all over the world are conservative, clinging to traditional ways. For many farmers in India, this traditional conservatism is accentuated by illiteracy, poverty, lack of

contact with modern science and attitudes and even by caste and social barriers.

In most of the developing countries of the world, under any form of agrarian organization, assuring higher farm production has proved one of the most difficult of all production problems. In India, getting millions of traditional small farmers to adopt new methods will take time. It will also take patient persuasion and active help—more farm extension services, more farm supplies, credit and marketing facilities, effective land reforms and fair farm prices. Irrigation—the life blood of Indian agriculture—must be vastly expanded, and more farmers taught to use "wet" farming techniques. Eventually irrigation must cover nearly half of all India's farm land—about 175 million acres, compared to 70 million or so irrigated at present. On the rest of India's farming area which cannot be irrigated and which must depend on rainfall, teaching modern soil and moisture conservation methods must have a high priority. Far more fertilizers, (eventually as much as 4 million tons* or about 25 times more than at present) must be produced by Indian industry, as well as insecticides and improved farm implements.

Speeding up India's farm production then is a process that will take time, patience, highly efficient planning and organization, and increasing industrial support. Yet the potential of agriculture is so great, its relation so close to the hope of raising rural incomes and abolishing poverty, that over the Third Plan and future Plans, supreme efforts must and will be made to do so.

The Great Potential of Industry

India's other highly promising road out of poverty lies in sharply stepping up production from industries, large and small. Because of its natural resources, India has very

*Of nitrogenous fertilizers only.

important advantages and considerable potential for industrial growth. Its known reserves of iron, manganese, bauxite are extensive. There is considerable coal, mica and atomic materials such as thorium ores. Surveys and explorations have already shown the possibility of oil reserves. India's famous rivers have a potential for hydro-electric power perhaps among the highest in the world.

From the point of view of industrial growth, one of the most important of these resources is iron ore which is both relatively plentiful in quantity and of high grade. Here India has not only a valuable commodity which it can export to pay for some of its other developmental expenses but also one out of which it can produce its own steel—an essential commodity of all developing countries. India can, moreover, with efficient management, manufacture steel from its own iron ore at a cost below the existing world market price.

Taken together, India's resources of iron, coal, and other metals and minerals, and its growing supply of skilled manpower, provide an excellent base for a steel industry and for metal fabricating and processing. This has a double significance for India. On the one hand, with larger supplies of steel and other materials, plus a large and growing domestic market, India will over time be in a more favourable position to produce the goods needed for its own development—machine tools, power generators, electric cables, cement-making machinery and the like. India can thus become more self-reliant, more able to provide itself with development goods which today it must buy from other countries with the help of foreign aid. These goods in turn will provide the basic supplies for growing industries, so that they can produce more consumer and other goods, create more income and employment and develop more of that other essential "commodity"—technical know-how.

On the other hand, it is these industries, and the supplementary industries they help create, that over the years hold India's real hope of more diversified and valuable exports.

The demand for India's traditional exports of tea, jute and similar commodities is relatively limited. Metals and machinery as well as other industrial products, therefore, offer new promise for increasing India's export earnings and enabling it to pay its own way as a self-reliant partner in world trade in the future. The experience over the last ten years and the foundations already laid have shown that India can expand its industrial production efficiently along lines of real comparative advantage in relation to other countries.

On industry, India already has a good start. Even at the time of Independence in 1947, Indian industry had a broader base than that in any Asian nation outside Japan. Though still small in terms of India's population and their needs, and though concentrated largely on consumer goods, it had begun at least to exploit the country's mineral resources, and there was some steel and metal-working capacity and skill. An infant small industry had been started, although its knowledge of modern tools and techniques was far from adequate. Over the last decade, with help and encouragement and the stimulus of power and transport provided by the government, both large industry and small have shown tremendous vitality and competence and ability to grow in production and know-how.

Over the Third Plan and beyond, development of Indian industry is in any case dictated for other and urgent reasons. Modernizing Indian agriculture, as we have seen, will require farm implements, irrigation pumps, fertilizers and insecticides. All of them must be produced—as much as economically feasible—by Indian industry so that foreign exchange costs can be kept down.

Moreover, the expected rise in farm and other incomes—and in India's population—means a rising demand for consumer goods. To an extent, this demand is, as it must be, restrained somewhat in the early years to provide the savings needed for investment in future growth. This is a choice a democracy has to make by popular consent in the interest

of the nation. But a moderate continual rise in living standards is the very purpose of development and is essential in a democracy. Domestic industry must in the years ahead be able to manufacture at least the basic necessities of a better life in India—lanterns, bicycles, medicines, cooking oils, cloth, to name a few. Obviously, India cannot afford to import the growing amounts of consumer goods needed by a population of its size.

Further, industry will help create the increasing employment off the land which must be provided for India's rapidly growing labour force. About 70 per cent of India's people today depend on farming—as compared to only 44 per cent in Italy or Japan for example, or about 15 per cent or less in the U.S. and West Germany. Land is already scarce—there is too little to provide enough work in agriculture alone for the expected rise in population. Under-employment and unemployment are now high in India, a characteristic sign of "under-development". Until a country has developed its industrial base considerably, it is difficult to absorb even all the people coming of age each year to seek and need work.

Looking at the prospects, then, if India can develop now the basic facilities like power and transport, if it can get the raw materials, train more skilled management and manpower, develop its technology and industrial know-how and put in enough capital, very rapid and sizable increases in production are possible rather quickly, as has been amply shown in the recent years.

None of these things, of course, are easy. Developing industry, like agriculture, is a complex task.

Further, building many of the advanced industries takes time. There is a long "gestation" period from the time a factory is planned to the time when it goes into actual and full production. The experience of the Second Plan indicates that this gestation period in an under-developed economy takes even longer than may be first expected.

Yet complex as it may be to develop industry, its

necessity and potential are so great that over the Third Plan and in the years ahead the utmost efforts will be made to press to the full India's considerable natural industrial advantages.

Education and Productivity

India's third line of action in its conquest of poverty is closely related to the other two. It is to lift up the level of productivity of the nation as a whole and gear it to the needs of the country. The main key here is education—not only general education, but technical education to raise the levels of skills and technical know-how on the farms and in the factories. For India this is a very urgent problem indeed, although compared with some countries just beginning their development, India has a comparatively large corps of technically trained men and women. At the same time, even today, after considerable spread of education, only about a fourth* of the Indian people are literate.

India has already made a strong beginning in general education, and in technical training. There are about 43 million children in school today, another million in colleges and technical institutions. India is turning out three times as many engineers today, for instance, as ten years ago. But it may take 20 years more to produce enough scientifically and technically trained people for India's needs. The quality and character of training must also be improved. Over the next five years, and over the next 15, technical training must have a very high priority. So too must general education—the first and the essential means of opening men's minds to new methods and new techniques.

The Problem of Population

India's hope of raising living standards over the future is influenced by another very important factor: whether it can cut down the rate of growth of its population and eventually

*The provisional figure from 1961 Census is 24 per cent. This compares with 46 per cent in mexico, 78 per cent in Italy (in 1954).

stabilize its population. India's population, already the second largest in the world, is growing at a more rapid rate than expected a decade ago—over 2 per cent a year. This higher rate is due chiefly to better health conditions which are markedly reducing the death rate and raising life expectancy. This is a usual phenomenon in under-developed countries—that improved health conditions begin to show up in population increases before the desire for, and knowledge about, family planning become widespread enough to help reduce population growth.

India's 1961 Census has just been completed. As shown below, present estimates are that, in the last decade, India's population has increased to a total 438 million, whereas 431 million was a calculation made only two years ago. (The Second Plan's original estimate was 408 million). This means that in the past ten years India has added another 76 million people—almost as many as in the preceding two decades, and more than the entire population of France or Britain. By 1976—15 years from now—India may have added another 187 million people—or, as mentioned earlier, about as many as the total present population of the U.S. By the end of the Third Plan, India now is expected to have 492 million people.

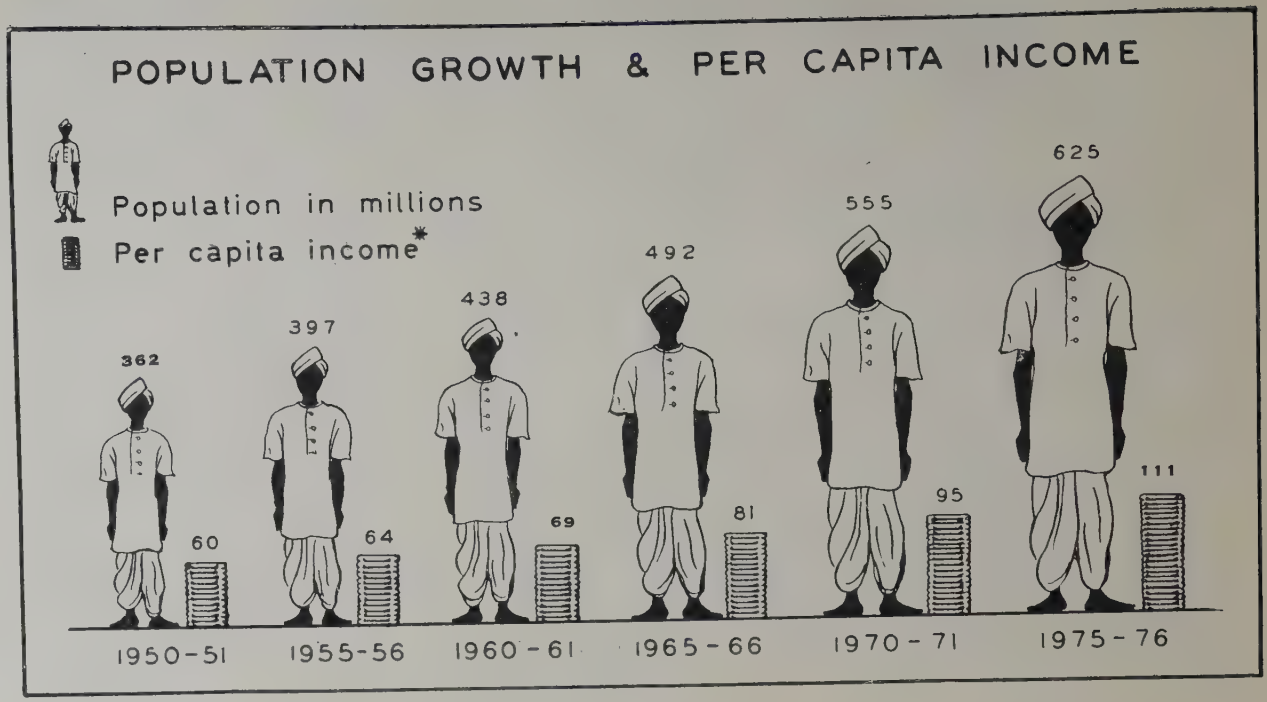
Some idea of how much larger these increases are than expected earlier is shown in the estimates of population growth prepared by the Central Statistical Organization (C.S.O.) as late as 1959.

POPULATION FORECASTS

(in millions)

	1951	1961	1966	1971	1976
Provisional estimates (based on 1961 Census)	362	438	492	555	625
C.S.O. estimates (1959) ..	362	431	480	528	578

A high rate of population growth of course limits rather severely the rate at which incomes and standards of living


POPULATION GROWTH & PER CAPITA INCOME
Population in millions
Per capita income*
362
60
397
64
438
69
492
81
555
95
625
111
1950-51
1955-56
1960-61
1965-66
1970-71
1975-76

* in dollars

can be raised. A rising population means that more food, cloth, housing, education, health and other services will be needed just to maintain present living standards. Equally important, more of India's scarce resources must be devoted just to keeping up with population increase rather than building for the future. More employment must also be created, especially outside of agriculture. Over the next five years, some 17 million more people will come of age to need jobs. Over the next 15 years it may be 70 million, of whom two-thirds must find work off the land. Providing employment for this vast number is a formidable task.

Obviously then, stabilizing population is an essential part of India's strategy of development, and India has become one of the first countries to start a nation-wide family planning programme.

Yet, even with urgent efforts to slow down the rate of population growth, results cannot, with known methods and perhaps more particularly in a country where tradition is powerful, be significantly felt for a number of years. Facing the fact, India must push forward to keep production ahead of the needs of the population it now has and will have in the coming years, before any family planning programme, however vigorous, can bring it to a point of relative stabilization.

Looking at the prospects over the long run, therefore, it is clear that India's hope for raising production, income and living standards—and of being able to do so with less and less reliance on foreign aid—hinges on several key factors. The Third Plan as the critical phase in a new intensive period of development is designed to press vigorously on them all.

First, it hinges on the speed with which India can teach its millions of farmers new methods and supply them with irrigation, fertilizers, implements, technical help and other needs of an improved and highly productive agriculture.

Second, it hinges on the speed with which hundreds of thousands of workers and businessmen and managers can be supplied with the equipment, raw materials, power, fuels and transport necessary, and learn new skills of manufacturing and management.

Third, it hinges on a rising level of education, especially scientific and technical education, that will raise productivity.

Further, and certainly in the long run, it will depend on India's success in slowing down population growth.

Finally, to a very large degree, it depends, in the initial years, upon very substantial increase in the investment being made in agriculture, in industry, in education—in short, investment in development.

Investing in Growth

Most countries which have made very marked progress over the recent years have put a sizable and increasing part of their national incomes into development. Indeed, the progress a country makes is very directly related to the amount of real resources it can put into development. For example, the European Common Market countries and others such as the U.S.S.R., the United States and Japan have invested 17 to 21 per cent over the last decade. Turkey and the United Arab Republic and another middle group of countries put in about 12 per cent, the Philippines and Indonesia about 7 per cent.

In the First Plan, which was a modest first effort, India invested only about 7 per cent of its national income in development. Today, it is investing about 11 per cent, including the contribution of foreign aid. To reach the goal it hopes for in the next five years, by 1966 India intends to put in about 14 per cent or more into development again with the help of foreign aid. In 15 years—by 1976—India hopes to put in about 19-20 per cent*, or relatively twice as

*Actual amounts to be invested over the Third Plan, $21,840 million; over the Fifth Plan (1971-76), $52,500 million (all at 1960-61 prices).

much as today, with dependence on foreign aid progressively cut down.

The reason so sharp a step-up in investment is necessary is that India like all developing countries has to invest, as we have seen, both in the present and the future at the same time. This means real sacrifices of income, consumer goods and other benefits now, for the certainty of a better scale of living and more economic independence in the future.

Paying for Development

To the utmost, India will draw these investment resources from its own savings—from taxes on personal and corporate incomes, excise taxes and other revenues, from earnings of private and government enterprises and from voluntary savings. Although a high level of savings is not easy for a country where standards of living are so low, India can and should do better than it has in the past.

To finance development over the Third and later Plans will call for far heavier taxes, far greater efficiency, far greater sacrifice and austerity. Production as well as imports of all non-essential or luxury goods must continue to be severely controlled. Exports will have to be stepped up to earn more foreign exchange—even when this means that the Indian people will to some extent have to do without some of the exportable goods.

But however great the effort, shortage of enough capital and resources is one of the plain facts of "underdevelopment" at this stage of India's growth. About 90 per cent of the First Plan and 80 per cent of the Second Plan outlays by government have been financed by India's own efforts. The vital balance has been made up by foreign loans and grants. For the Third Plan, a substantial part, about 29 per cent of the necessary Plan outlays* by government, is required from abroad.

*Or about a fifth of total investment in the Plan.

Many of the basic goods needed to develop a country, and build up its own productive capacity, can at first come only from advanced industrialized countries—critical raw materials, equipment, components and "maintenance" goods, such as power generators, earth-moving and other machinery, railway equipment, tool-building machinery, fertilizers and oil.

The need for these goods increases as development picks up speed and is at its height just before and during the stage when a country is making its critical effort to become "self-generating" and self-reliant, and able to go ahead on its own. The stage has been sometimes described as one nearing the "take-off" point for an economy. Because of the progress India has made over the past ten years, it is now one of the under-developed nations approaching this phase of development, although for a country of this size, a large and pervasive effort is needed to enable India to enter this period of more rapid growth. The needs for foreign equipment and supplies are, therefore, now and over the next decade or so, at their peak.

Indian exports will pay for a part of these goods, and these exports are to be developed and diversified, as we have seen. But exports and other foreign exchange earnings will not pay for them all. Here is where the dilemma of such a large under-developed country arises. In order to work towards self-reliance both import saving and export industries must be expanded. Yet for the most part these are, or depend upon, the "heavy" industries requiring large amounts of equipment and machinery and power and transport facilities to get going. Thus, to build up domestic production of these goods demands, for a time, a *step-up in* imports which cannot be paid for out of export earnings. Foreign assistance is thus necessary to help get over the "hump" of these early years when the country is building up its own productive base.

The foreign assistance that India has already received

has been substantial, and has played an especially important role in hastening India's growth. India particularly values this help, since it provides the means for greater self-reliance in the future. At the same time, India feels it must raise itself by its own efforts to the utmost extent possible, and work towards reducing its dependence on foreign assistance as soon as it can.

Towards Self-Reliance

In summary then, India's efforts towards self-reliant development must be made up of many parts. Some kind of self-reliance is, of course, possible by accepting a slow rate of growth out of poverty. But what India must do, as we have seen, is to achieve a far faster rate of growth to meet the rising demands of its people now and in the future.

Self-reliance then must become possible at a dynamic rate of development. To achieve it, India must pattern its growth to produce more and more of the development goods it needs; it must restrict imports to essentials; it must deliberately phase its growth to produce more exports to pay its own way when buying abroad. It must gather considerably more taxes and savings to invest in development, even at the cost, for the time being, of some sacrifices and austerity. Such are the essential ingredients of "self-reliance".

Progress towards self-reliance does not mean a search for self-sufficiency. Rather it means that as the Indian economy grows, India will, like other developing countries, change the amount and character of its imports to many new kinds of advanced machinery, raw materials and consumer goods. Yet at the same time, India will be better able to produce for the world market. It is a developed, not an under-developed, nation, which is the most vigorous customer in world trade. In short, for India self-reliance means an economy going forward at a faster rate of growth, but one more and more able out of its own resources to pay for its own development.

Planning for Growth

India's chances of rising more quickly out of poverty depend also on its skill and determination in mobilizing and directing all its efforts and resources to the job.

Countries already highly developed have not always seen the need to plan for future growth, although many have done so in a period of emergency such as war, or to achieve some particular goal like development of nuclear energy or the conquest of space.

A country facing, as India is, an emergency of development for its people as a whole, cannot move ahead—certainly it cannot move ahead fast enough—without clear thinking as to what its goals are, and careful planning on a democratic basis to choose priorities and to help mobilize and guide all its resources towards meeting them. In its race to raise living standards for a rising population, and build for a future less dependent on foreign aid, India must concentrate its resources on carefully determined priority needs. At this stage, it cannot afford the freer yet haphazard development of a richer nation with a hundred years to grow. Time is short and resources scarce; essential elements of development cannot be left to chance but must be deliberately stimulated or created at the earliest.

Planning, therefore, is urgent to provide, as quickly as possible, supplies of food and basic raw materials, fuels and transport and power, to assure that essential industries are set up, to train enough engineers and other skilled workers for priority production, to set up farm extension services, train teachers, and build medical and agricultural colleges, to expand banking, credit, marketing and supply facilities for farmers and industry. Few of these things will happen soon enough unless they are made to happen.

The demands on the economy are great and growing. The pressure for higher living standards, for more education, health and welfare services, the pressure from private and

government enterprises for more raw materials and equipment, for skilled workers and administrators, for more power and transport, the rising expectations of the people themselves—such pressures as these are being increasingly felt as the economy swings into a more dynamic period of growth.

Yet at the same time, at this stage, foreign exchange, equipment and raw materials and trained manpower are scarce and India's resources slender. As a result, it is essential to allocate them, as other countries have done in times of emergency, to priority targets democratically agreed upon, and assure that all parts of the economy keep in balance to prevent costly bottlenecks and delays. As is familiar in many countries which have tried to reach a national goal in a time of emergency, asserting such priorities means allocating scarce supplies to essential programmes and licensing for manufacture and import.

The other main function of planning is to determine how much resources can and must be raised—by both government and private enterprises—to finance development without undue inflation or pressures within the economy. Later pages discuss this crucial problem of raising resources; the Third Plan's proposals for doing so are an integral part of the Plan itself.

In a fast developing country, planning, of course, cannot be inflexible or arbitrary, but must be a continuing process, with goals, targets and resources re-examined periodically in the light of actual progress and experience. While long-range goals and needs can be broadly laid out—as India has just done for a period of fifteen years or more—India has chosen a five-year span as the most convenient and manageable planning period for analyzing needs, setting targets, and estimating resources to meet its goals. Each year, too, especially at the time of the annual budgets of the Central and State Governments, progress, priorities and policies and phasing are studied. The Plan can thus be kept flexible and all

programmes kept in balance with each other, with resources, with new factors that come up and with the country's social and economic needs.

The Third Plan, like each of the two earlier Plans, was drawn up by India's Planning Commission, in consultation with the States and Central Ministries, and discussions with private organizations and industries. This agency was set up in 1950, in one of India's first acts as a democratic republic, to look ahead to the needs and goals that would enable the country to develop and bring about the economic and social regeneration of its people.

In essence, the Third Plan, like the Plans before it, attempts to set challenging yet possible targets which must be achieved if India is to raise the living standards of her over 430 million people. It attempts to outline the direction in which all parts of the economy must move to win these targets, and the national effort and resources that must be mobilized to do so by the State and Central Governments, by private enterprise and by the Indian people.

As is necessary and fitting in a democracy, at all stages of preparation of the Third Plan, as of earlier Plans, there has been considerable discussion—by Parliament, the State Legislatures, by the press, by public and panels of experts in special fields, by committees representing major private industries.

A Draft Outline of the Third Plan was issued over a year before the final Plan was presented to Parliament in August 1961, so that its objectives, priorities and targets could be reviewed in detail with the widest public discussion. The criticisms and suggestions received were studied and greatly helped the Planning Commission in preparing the final Plan and also the Ministries and State Governments in preparing their detailed proposals.

All Five Year Plans are submitted to government and to Parliament for approval. Responsibility for taking decisions for carrying out plans rests with the Central Ministries and

the State Governments. The Plan is in no sense a law but serves as a general guide to action. An important function of planning, however, is to watch and help evaluate progress, so that priority programmes do not lag or get out of balance with each other.

While preparing the Third Plan in careful and practical detail, India also devoted considerable thought and effort to long-term "perspective" planning, which is essential for a country with deep-rooted social and economic problems, with a growing population and a long hard road ahead to make a real impact on Indian incomes and living conditions.

To make long-range planning more accurate and effective the Planning Commission is stimulating in various government agencies and in leading university and research institutions, economic and social research in many key fields, and studies in natural resources which can give a comprehensive view of India's long-term problems and possibilities for growth. Even though considerably more detailed and specific work needs to and will be done, it is already clear that the potential for development of India's natural resources is vast and, with systematic study and exploration, may be increased far beyond present expectations. To assess and assure their development is one of the major and most rewarding jobs in planning.

Targets for 1966 and 1976

Taking all factors into account—how fast India can push farm production, industry and education, how large an increase in population is expected, how much resources can be put into development, how well India can plan and mobilize its efforts, what India's potentialities are for growth—India has made some careful estimates of how far the economy can go in the Third Plan. These Third Plan targets are given in detail in later pages.

India has also made some tentative projections for the years ahead. Such projections are necessary for each five

years, each development period, so that India can direct all its energies into meeting priority goals now and measure its progress as it goes along. India began this process with the First Plan.

Today, looking ahead over the five years of the Third Plan, and the next fifteen years or so, India has been able to estimate some key targets it hopes to achieve. They are high targets and will not be easy to reach. But with the greater understanding India now has of the development process and of its own potential, and if utmost efforts are made, India believes the goals are within the range of possibility.

One of these is to double the nation's income in about 12 years or so. India's present national income, even after the considerable rise over the last ten years, is about $30,450 million—less than that of the State of California which has 15 million people against India's 438 million. By 1966, the end of the Third Plan, the income target is $39,900 million. Looking more broadly ahead, in fifteen years, that is by 1976, India expects to be able to achieve an income of $69,000 to $71,000 million.*

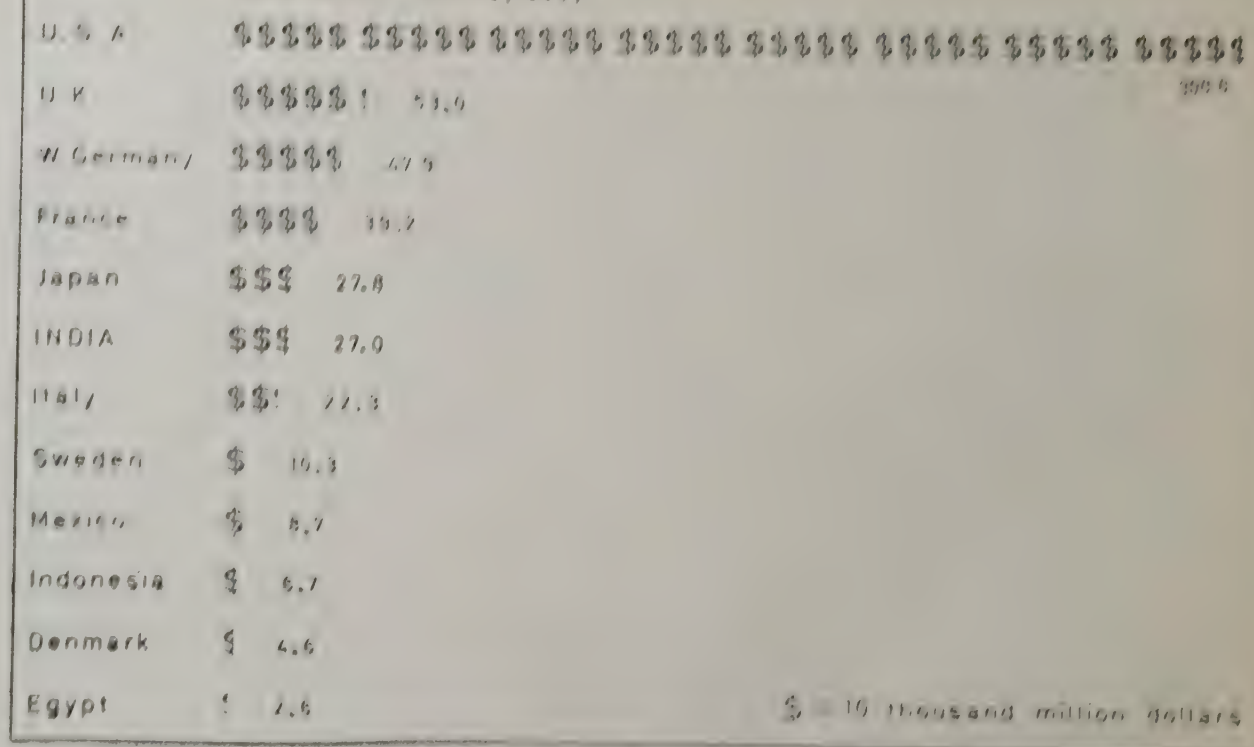
If India does succeed in bringing its national income to these levels, income per person will go up from $69 it is now to about $81 in 1966, and to about $111 in 1976, taking into account the expected growth in population. Roughly this will mean that even after fifteen years of intensive growth, the average income per person will be a little over a third of what Japan has today—an indication of how far and how fast India has yet to go.

To reach even these targets will require a substantially higher rate of growth for the economy as a whole—as close as possible to 6 per cent a year, as compared to an average

*Present estimates for national income are: 1961, $30,450 million; 1966 $39,900 million; 1971, $52,500 million; 1976, $69,000 to $71,000 million (all are in terms of 1960-61 prices). As a basis of comparison, Japan's income (1959) was about $28,000 million; West Germany's about $48,000 million; and the United Kingdom's $53,000 million.

HOW INDIA COMPARES IN NATIONAL INCOME

(In billions of dollars, 1959)



Source: U.N. Statistical Year Book, 1959

of just under 4 per cent over the past decade. To achieve these goals will also require the high step-up in investment referred to earlier—from 11 per cent of national income today to 14 per cent or more in 1966, and to 19-20 per cent by 1976.

Looking ahead at how fast India must go to provide a better life for its people and to progress towards self-reliance, India, after making its careful estimates of Third Plan targets, has tentatively set some preliminary key goals of production capacity that should be possible ten years from now—in critical fields—for steel, machinery, power, coal, foodgrains and exports*. Setting such provisional targets as these has a real importance now as India begins its Third Plan and prepares for the expanding needs of the future.

With India's long-run needs in mind, better decisions must be made today and sharper priorities fixed to meet not only the Third Plan's goals but also to prepare the ground for faster growth in the years ahead.

India has equally important social aims and these are described in the next pages. For India, development involves not only far-reaching technological but also social changes to assure that the benefits of growth are more equally shared.

How fast India is moving now, how far it has come in these past ten years, what it has learned, is also told in the following pages, which review the past decade of growth, and the approach and detailed proposals and programmes for the Third Plan. Much has been done; infinitely more remains to be done. However high the targets India sets today for the Third Plan itself as well as later years, they are small indeed in relation to India's size and to the long enormous task ahead of conquering poverty in this vast and ancient land.

*Some of these tentative targets for 1971 are: 18-19 million tons of steel ingot capacity, about five times as much as today; 21-23 million kW of power, four times as much as today; 170-180 million tons of coal, three times as much as today; 125 million tons of foodgrains compared to 79 million or more today; $3360 million worth of machinery, ten times as much as today; and $2700 to $2900 million worth of exports, twice as much as today.

CHAPTER II

PACING SOCIAL GAINS WITH ECONOMIC PROGRESS

ALTHOUGH the conquest of poverty must of course be the starting point, India's goal is not economic growth alone. Rather, the whole purpose and reason for development is to provide the masses of the Indian people with the opportunity to lead a better life. In a country where the great majority of people live so close to the margin of poverty, the claims of social justice have great urgency, and a democratic society must see to it that not the few but all its people share, as equally as possible, in the benefits of the country's advance. This is especially true since, in the early stages of development, full employment is not as yet possible and the country cannot devote itself entirely to improving living standards but must invest in future growth.

As India sees it, economic development is but a means to an end. What India hopes to achieve is a society which, though based on its own traditions, is efficient, progressive, capable of growing rapidly, without a great gulf between the rich and the poor, nor economic power concentrated in the hands of the few; a society which, without caste or class, has a strong sense of social unity and mutual obligation under a democratic system of government. Many of the advanced nations today already have or are reaching towards this kind of society. India calls it a socialist pattern of society, using socialist not in a doctrinaire but in the broad sense of the word.

Pacing social gains with economic growth is not easy, as history testifies. In some countries in the past, the early stages of industrialization were for a time accompanied by great inequalities, by a widening gulf between rich and poor, by growth of monopolies and concentration of economic power in the hands of a few.

Similarly, in many developing countries today there is concern how the benefits of development can be spread not only to the few, but to the majority of the people; how, as new industries, trades and mines are opened up, proper social policies can be devised to assure to the people as a whole more employment, education, health services, better living standards and opportunities.

India's struggle for Independence from its very beginning had a large element of economic thinking and social reform. Political freedom indeed was considered the essential means to overcome mass poverty, to help farmer and craftsman, to remove privilege and injustice as well as to stimulate new industries and technological growth. It may be remembered that the freedom movement was being carried on, moreover, at a time when in most of the advanced countries of the world, under the impact of many forces including the great depression, considerable rethinking was taking place on the problem of employment, distribution, social security, the role of labour and of monopolistic concentrations of wealth in a free society.

As India's political struggle developed and spread, its social content became deeper and, under the guidance of Mahatma Gandhi, grew more and more identified with social and economic aims, and uplift of the depressed and underprivileged.

The Constitution of the new India strongly reflected this concern with social reform. It set forth as the country's "directive principles" that it should strive "to promote the welfare of the people" by securing "a social order in which justice—social, economic and political—shall inform all the institutions of national life"; further, that it should help secure "adequate means of livelihood" for all, and assure that the economic system—both in its ownership and operation—served the common good.

These general principles were given a more precise direction in 1954 when the Indian Parliament adopted what it

called a "socialist pattern of society" as the aim of economic and social policies. Later, in the Second Plan, India defined the socialist pattern more closely : "Essentially, this (phrase) means that the basic criterion for determining the lines of advance must not be private profit, but social gain, and that the pattern of development and the structure of socio-economic relations should be so planned that they result not only in appreciable increases in national income and employment but also in greater equality in incomes and wealth".

Ever since Independence then, two main aims have guided India's planned development—to build up by democratic means a rapidly expanding and technologically progressive economy and a social order which can provide more equal opportunities to every citizen.

India has had special reason to be concerned that all its people, rather than the few, share in the benefits of development. In India of the past, there had long been a great gulf between the elite and the privileged and the hundreds of millions of the poor. Bound up in its old traditional society and petrified to some extent by colonial rule, were the privileges of landed wealth under the semi-feudal systems of land ownership, the privileges of caste, and also a growing contrast in income, education and opportunity between the cities and the villages. These old patterns in India's social structure presented many basic conflicts and barriers to economic growth. Such patterns are the first to fall as a country develops under a democratic system of government, and some of the old distinctions are already passing. Planned development must hasten the process.

One of the signs of development is the growth of a middle class, in between the extremes of rich and poor, and this class has been rapidly growing in India, through the rise of industry and trade, the spread of employment and education.

Yet at the same time, the very act and dynamism of economic growth—especially the growth of cities and of

industry—tends to introduce certain new inequalities in levels of income and opportunity. Those in the cities, or those who already have special advantages in training, skills, wealth or privilege and economic power tend to go ahead far faster than the rest. The gulf between the rich and privileged elite and the less privileged low income groups, and between opportunities and living standards in the city and the village, may tend to widen.

As India has prepared its Third Five Year Plan, and looked back on the experience of the last decade, it has been possible to see in sharper focus some of the problems shown up by the early stages of development and some of the areas of possible conflict between social and economic goals.

Three social aims are of particular concern, while India pushes ahead as fast as possible with economic growth. One is to assure, specifically and deliberately, that more equal opportunities become available for all, regardless of class, caste or region. Another is to reduce as much and as soon as possible the present inequalities of income and privilege and prevent new inequalities from arising. Further, India is also concerned to prevent the growth of monopolies and concentration of economic power in the hands of a few.

More Equality in Income and Opportunity

What is meant by "more equal opportunities"? Certainly the start is some assurance of the basic necessities of life—in particular, food, work, a chance for education, some reasonable health protection and housing, and income enough to provide at least tolerable living standards. Many —indeed most—of the Indian people do not have this assurance; some fall far below what even in India are considered tolerable living standards.

Basically, the problem of providing more equal opportunities for all is one of making India grow far faster and produce far more—and thus have more for all to share.

Poverty itself must be conquered and, as we have just seen, the conquest of poverty is a long way off.

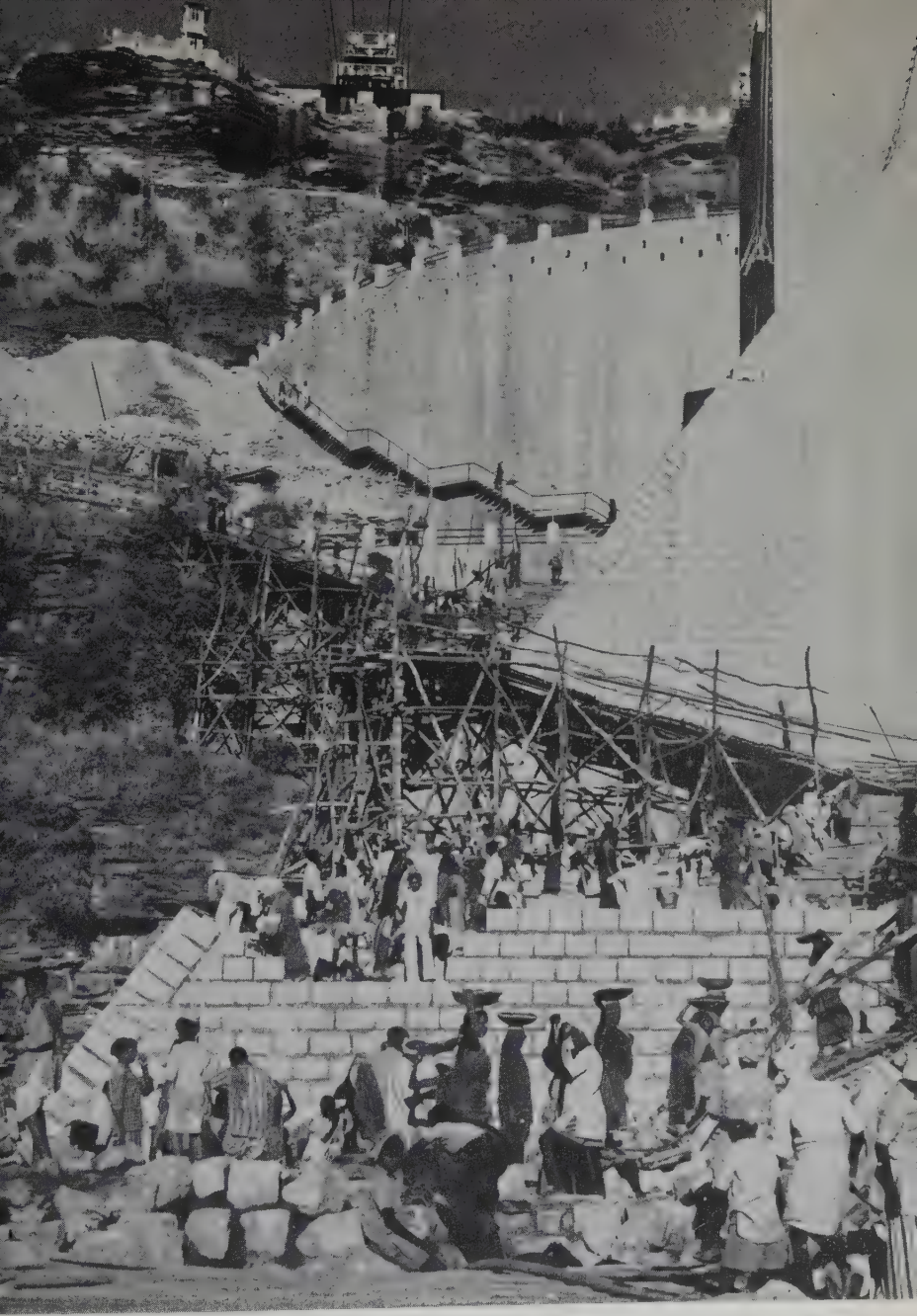
Yet as India grows, proper planning and social policies can help direct the pattern of India's growth to provide higher production and at the same time, as rapidly as possible, more opportunities more widely and fairly spread, and a more equitable distribution of income.

Perhaps the greatest inequality both in income and opportunity is that between the man who has a paying job and the man who is unemployed. As we have seen, in an underdeveloped country, particularly one so densely populated as India, the rate of growth is not in itself great enough to provide full employment before basic industry has been fully established and strengthened. It will take time for industry, agriculture and trade and services—however fast these expand—to create the employment needed.

At the same time, the new development programmes of the Third and later Plans will be creating considerable new job openings and putting more people into employment, into new trade and industrial opportunities. More people will thus find their way into the middle-income group. In addition, to enable the lowest income groups to meet their minimum needs, India also intends to start over the Third Plan a large-scale public works programme in rural areas, especially in densely populated regions where unemployment is high, and at times of unemployment in the slack agricultural season. Yet even with all such development programmes, there will still be a backlog of unemployed. The immediate and the long-range solution can lie only in faster growth of the country as a whole.

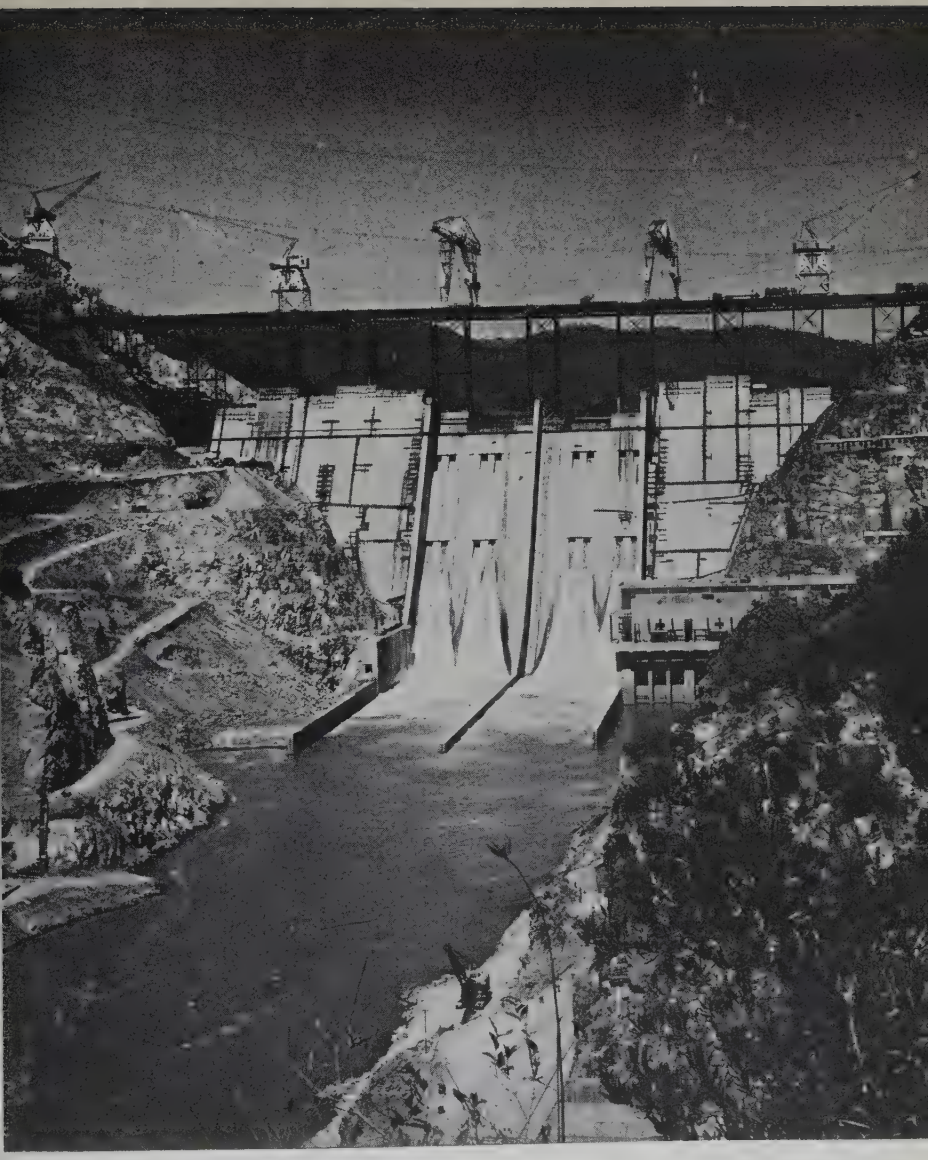
At the same time, because of its history, India has felt a particular concern, as it tries to bring up the levels of the lowest, not only to correct the inequalities of the past, but to see that the present gulf between rich and poor does not widen or new inequalities develop.

One of India's first efforts to correct traditional inequali-



According to the Prime Minister, the great river valley projects and industries that are coming up in India are the temples of her new age. Here is a view of the Gandhisagar dam photographed when under construction. It is part of the Chambal project.

In fulfilling the agricultural targets set for the country, modern implements have as important a role to play as irrigation, fertilizers and credit supply. The Community Development movement is popularizing new steel ploughs (like this one used by a farmer in Rajasthan) and other implements.



The 740 feet high dam at Bhakra. It has become a byword for India's development effort.

The Plan places as much emphasis on the production of cash crops as on growing more foodgrains. Seen here is a superior variety of sugarcane from the agricultural station at Samalkot, Andhra Pradesh.

ties has been to introduce, beginning very shortly after Independence, land reforms which would strike at the old evils of oppressive "landlordism" and give the farmer a greater incentive to produce more on the land he tills. The principal reforms have been to abolish the semi-feudal "tax-farming" system, to cut down some of the excessive rents demanded of share-croppers and tenant-farmers and set a ceiling on the amount of land any one landlord may hold. These reforms have made some progress, though not as much as hoped, and tighter enforcement of the new reform laws is necessary.

Another means adopted to assure more equal opportunities and living standards and correct inequalities, past and present, is more widespread education and other social services. In advanced countries such services, especially education, have played a very important part in giving all groups and classes an equal chance to rise up the economic and social ladder. In India too they will have a similar effect. While not all advanced social services can be afforded until the economy is far more developed, the spread of education is a vital social goal in a democracy, and a vital ingredient, as we have seen, in the development itself.

Education will be emphasized over the Third and later Plans on a broader scale than has been possible so far, beginning in the Third Plan with a target of free compulsory education for all children 6-11 years old. Vocational and technical training, which will be especially stressed, in particular enables young people to rise more freely up the economic ladder as well as provides basic skills needed for development. Merit scholarships to enable promising young people regardless of income to follow-up their education are being introduced on a nation-wide scale. For India's backward classes—its tribal people and Harijans*, so long at the bottom of India's economic and social structure—there are special programmes of assistance, again particularly in education.

*The word Harijan means "child of God", the name given by Mahatma Gandhi to the so-called lower castes.

In industry and the cities, inequalities in wealth and opportunity are a particular and complex problem at this period of India's growth. In all advanced countries these inequalities have already been greatly reduced. In a newly developing country, unless deliberate efforts are made very early there is in the first stages, as we have seen, a tendency for them to become even larger than before.

Here, India as a democracy, while pushing ahead to bring up incomes as a whole, must take specific measures to cut down the spread between the higher and the lowest income groups. The means most widely used in advanced countries is the income-tax, and special taxes such as a capital gains tax that will cut down unreasonable profits from land speculation or trading. Extension and improvement of India's tax system, especially to prevent tax evasion, are very necessary and India intends both to broaden and tighten up tax collection and deal severely with tax evasion.

By these means, plus a faster pace of overall growth, India hopes over the next ten or fifteen years to raise incomes of lowest income groups and to narrow the spread between the highest and the lowest. A spread of no more than 30 times between the highest and the average family income has been suggested as a possible target, although no ceilings are being set.

The gap between farm incomes and city incomes in particular tends to widen with the first stages of industrialization. Since most of India's people live in villages, this is a significant problem. To keep this gap as narrow as possible means pursuing several policies, all of great importance—improving farm production, providing more employment off the farm especially through rural industries and local works projects, providing adequate education and social services in rural areas, and setting a farm price policy fair alike to farmers and city dwellers. The community development farm extension service has a key part to play in serving as a spearhead for bringing new opportunities and more income

to the villages, and to assure more opportunities for the particularly depressed rural groups.

At the same time, for many in the cities, perhaps more particularly for unskilled villagers who migrate in search of jobs, the tremendous growth of India's cities has led to a growth and worsening of slums and living conditions. For other city dwellers, especially those speculating in land and property, it has meant, as noted earlier, new quick wealth and brought about greater inequalities in income and opportunity compared to the rest. Special measures are necessary, and will be taken, to improve city living conditions—among them State purchase of land in and near cities to prevent speculation, city planning, housing and land allotment policies designed to help the lower income groups, slum clearance and improvement, well-enforced taxation of capital gains and urban property. Holding prices steady of the necessities of life, especially food, is essential for both city and village dwellers, and for all fixed income groups.

A special committee set up by the Planning Commission is now studying the changes that have taken place in living standards and in income and wealth distribution over the past ten years, and India will keep a very close watch to see that the benefits of economic growth are spread as widely as possible.

India is also encouraging movements through which the public can play a leading part in securing social justice—through trade unions for example, through universities, through cooperatives and other voluntary organizations, all of which in their special ways have done much in other countries to give support and leadership to social policies promoting "the general welfare" of the people as a whole.

Private, Government and Cooperative Enterprise

The *way* that the Indian economy develops has very close bearing on how quickly it can grow and bring about

social justice and wider opportunities. Since long before Independence, but particularly over the past decade, India has been evolving its own economic system suited to its own needs. Instead of borrowing a system developed to meet another country's particular conditions, India intends to take advantage of every possible way of economic growth consistent with democracy and its own economy and social aims.

What India has now and intends to encourage in the future is a pattern of government-owned essential industries working in harmony with vigorous private and cooperative enterprise—"a mixed economy", with each sector complementing the other and contributing to the development of the nation as a whole. At the same time India believes, in keeping with its long-considered principles of economic and social growth expressed in its Constitution, that the government sector must expand in order to put itself in a more strategic position to stimulate growth throughout the economy, to assure smaller private industries and cooperatives an equal opportunity to grow, and prevent undue concentration of economic power in the hands of a few.

A perspective look at India's economy today presents the following picture :

Private enterprise now accounts for the major part of all production. It consists not only of large industries but also the millions of farmers, craftsmen, traders and small businessmen who together make up so large a part of India's total population and economic activity. Virtually all of Indian agriculture is owned and run by private farmers, most of them small peasant owners. The new vitality of small private industry (in part the result of India's small industry development programme) has been one of the outstanding and hoped for social and economic changes of the last decade. Trade, housing and construction are other fields where private enterprise plays the leading part.

Large-scale private enterprises today play a key role in

the nation's industrial production and their response and performance in India's development already have been considerable. Private industrial investment* has tripled in the last ten years. By the end of the Third Plan, it is expected to be four times the level of 1950-51.

The government at the same time has taken a very active part in developing certain industrial fields, where very large capital investments must be made—in power, transport, steel and metals, heavy machine-building. In an underdeveloped country and one where private industry had long concentrated largely on consumer goods, such vigorous action by government in critical fields has been essential to assure that such necessary supplies and basic facilities are available rapidly enough to speed up India's rate of growth. The lively growth of private industry over the last ten years —far faster than in previous decades—has been due mainly to the new opportunities provided by expansion of the economy, particularly in power, transport and heavy industry, under planned development and government initiative.

Over the Third Plan the government will continue to take the initiative in providing more of these facilities, and continue to create an atmosphere favourable to the growth of private industries, specially of small and medium sized firms and progressively of cooperatives. In view of the demands for far faster production and growth in the years ahead, and the need to assure that all parts of the economy have equal opportunities, the government sector is expected to grow both absolutely and at a faster rate than private enterprise.

It is mainly in the field of large-scale industries that the question arises whether a particular type of industry should be assigned to government or private enterprise. The part which government plays is guided by the Industrial Policy Resolution adopted by Parliament in 1956, in which the special roles of government and private enterprise were

*As measured by fixed assets.

described. In general, the government is expected to provide especially for further development of industries which are of basic and strategic importance* or which are in the nature of public utility services. Other industries such as machine tools, essential drugs, basic chemicals, may be undertaken by the government to the extent necessary, although private enterprise is taking a vigorous part in such fields. Consumer industries are almost entirely in the hands of private enterprise and to some extent of cooperatives. Private enterprise, thus, has a large field in which to develop and expand.

Over the Third Plan, as over the last few years, the roles of government and private enterprises are thought of as supplementary and complementary to each other. In the case of several basic industries—fertilizer production and coal mining for example—where the government expects to play a major role in new development, private enterprise will also enter the field in a bigger way than in the past and supplement government's efforts. Private plants are already producing steel; other small ones will produce pig iron. Private manufacture of dyestuffs, plastics and drugs will complement the government's proposed production of organic intermediates. Similarly, although the government will manufacture basic bulk drugs, processing of these drugs will be done by private firms.

The government will also continue its present policy of stimulating and encouraging private investment, and open opportunities for development by private sector, both Indian and foreign. It particularly hopes to encourage private industry more and more to channel new investment into basic production on which India's present and future progress depends, instead of concentrating on consumer goods. Over the last few years, indeed, there has been a quite remarkable

*These include mainly steel, coal, strategic minerals, heavy engineering, defence production, oil, aircraft and ship-building, power, atomic energy; and also rail and air transport, and communications, which have for some time been government-owned.

increase in new private engineering, electrical, chemical and other private industries.

The Control of Monopolies

Private industry is thus expected to play a large part in India's development in the Third Plan. At the same time, there is real concern that the new opportunities arising for private enterprise should not result in undue concentration of economic power in the hands of a few big monopolies or corporations. The rapid growth of industry has brought the question very sharply to attention over the past ten years as it has in many other countries at early periods of their development.

In India's present stage of growth, well established firms have certain advantages in organization and expertise, better access to Indian and foreign capital and to contacts for foreign collaboration. Rapid economic growth tends to increase these opportunities. Modern technology also favours large size firms and plants to a certain extent. Not only do they have their own capital and profits to plough into expansion but it is easier to expand existing plants and often more economical than to build a new one or to enter the many fields which India now needs for its development.

On the one hand, the efficient production of large firms greatly helps the development of the economy as a whole. On the other, the growth of monopolies or the concentration of economic power in the hands of a few firms may prevent smaller producers from getting a chance, upset the balance of power in a democracy and develop new social conflicts and tensions.

Efficiently managed firms are necessary for speedy growth in total production. At the same time, acting from the broader social point of view, India intends as a major object of policy, and by every possible means, to encourage new small businesses to start up, to help medium-sized firms to expand and to promote cooperatives. By such means,

India hopes thus to foster valuable competition in efficiency, price and design of manufactured goods, as well as provide more equal business opportunities. Cooperatives are expected to become progressively much more widespread in small industry, distribution and construction, as well as agriculture.

Several methods of carrying out this policy will be used. Loans and credit to small industries, industry extension services, provision of "industrial estates", rural electrification are all measures designed to help small businesses to gain a foothold and grow. India already has started and will expand credit institutions for smaller firms, and an investment service has recently been set up to help put them in touch with foreign capital and technical help.

Cooperatives will also be helped in obtaining credit, improving techniques of production and management, and in training cooperative members, officials and workers.

The government already has many of the powers necessary to restrain the undue growth and power of monopolies on the one hand and encourage small firms and cooperatives on the other. Among these are the corporate, capital gains and other taxes and measures for rebate or incentive taxation, as well as other fiscal measures. India also has, in its Companies Act, a variety of anti-trust measures and controls. Because of shortages of raw materials and foreign exchange, the government's controls over licensing are an important way to restrain monopolistic growth and assure small and medium business opportunities to grow. All these measures will be used to the full.

The growth of government-owned enterprises in basic and heavy industries is another means of offsetting unhealthy private concentration of power, as well as of promoting a pattern of industrial growth among large industry, small industry and cooperatives that is both highly productive and socially desirable. Government-owned enterprises such as transport, power, basic industries and mines not only stimulate

production in the economy generally, but enable the government to be in a more strategic position to assure that small manufacturers and cooperatives get a due chance and share in growth, and that the economy as a whole keeps a democratic balance.

The problems of giving more opportunities to new and smaller business, private or cooperative, and preventing undue concentration of economic power are complex and closely bound up with problems of rapid growth and higher and more efficient production. Through its very success and dynamsim, a fast developing economy raises new problems of organization and management as well as social policy. India is giving these problems constant and close study to ensure that, while it gets the utmost production from the economy the pattern of growth is one consistent with India's goals of social justice and the welfare of all.

INDIA'S FIRST DECADE OF PROG

THE MAJOR ADVANCES

—National income up 42%

—Income per person up 16%, from $60 to $69

—Agricultural production up 41%

—Industrial production up 94%

THE ADVANCES IN INDUSTRIAL GROWTH

—Three new steel plants installed and initial production up 150%, to 3.5 million tons of steel ingots

—Production of iron ore tripled, to about 11 million tons

—Production of essential industrial materials considerably increased: over 3 times more cement; 69% more coal; 5 times more aluminium

—Production of machine tools 16 times higher

—New electrical equipment production started: production of diesel engines up 627%; electric motors up 600%; over 12 times more electric cables and conductors

—Over three times more electric power generated, and over six times more towns and villages electrified

—Nearly a 50% increase in mileage of surfaced roads; a 68% increase in freight traffic on railroads

—Consumer goods production up substantially: sewing machines up 800%; bicycles up 940%; automobiles up 224%; handwoven textiles up over 260%

—A strong start made on production of drugs, DDT, antibiotics and other pharmaceuticals

: KEY ACHIEVEMENTS 1951—1961

THE ADVANCES IN EDUCATION, HEALTH AND SOCIAL SERVICES

—85% more children in schools, to a total of 44 million

—15 million more children in primary schools alone

—159% more young men and women in colleges to a total of 1,052,000, with a four-fold increase in students taking engineering, technological and professional training

—A nation-wide malaria control programme cutting the incidence of malaria from 75 million to 10 million cases a year

—120 million people vaccinated in a national TB control programme

—A start on India's first rural health service, with 2800 health centres

—4000 more hospitals and dispensaries

—14,000 more doctors, 12,000 more nurses

THE ADVANCES FOR AGRICULTURE AND THE RURAL PEOPLE

—Production of foodgrains up 46%

—Over 18 million more acres under irrigation

—Nearly 4 million acres of waste land reclaimed for agriculture; and soil conservation extended to 2.7 million acres

—Land reforms benefiting 20 million farmers by abolition of antiquated land-holding systems

—Creation of a national farm extension and community development service now covering 370,000 villages, or over 200 million people

—A start made on a nation-wide rural housing programme

—More roads, post offices, community radios, linking once isolated villages

—A start on democratic self-government in rural areas to spur and carry out local development

CHAPTER III

INDIA'S FIRST DECADE OF PROGRESS

On April 1st of 1961, India completed its first ten years of development. The Third Plan is built on the sizable achievements made and the valuable lessons learned in these years.

Taken as a whole, what has been accomplished has been significant and very encouraging. Although the record of progress has not been uniform and there have been ups and downs, and some delays and shortfalls, today, instead of the stagnation of the previous decades, clearly and unmistakably the economy has been pushed into motion and is rapidly gathering speed, and a new vitality marks India's society.

To take a few of the key measures of economic progress, over the past ten years India has increased its national income by about 42 per cent. Income per person (in spite of the large population increases) has risen by about 16 per cent. Farm production has gone up by about 41 per cent. The biggest increase is in industrial production, which has nearly doubled. And—a very important fact—industry is becoming rapidly far more diversified and capable of filling the many more complex demands of a developing economy. Of special significance to India's future, the ground has been laid for far faster growth. Basic facilities like irrigation, power and transport which are essential for agricultural and industrial progress now and in the years ahead have been greatly expanded. Basic industries on which India's future growth and exports so greatly depend have been started or expanded—manufacture of steel, heavy machinery and engineering goods, chemicals, electrical equipment. Production in these new industries has gone up far more rapidly than industrial production as a whole. India's valuable mineral deposits of coal and iron have been opened up on a large

scale to feed industries, small and large. Many projects have been completed, in spite of delays caused in part by the foreign exchange crisis in 1957-58, and have either come into production or will do so in the immediate years ahead.

Education and technical training have become far more widespread. Taking these together with improved health and social services, and rising incomes and new employment opportunities, far more of India's people are able to take part today and in the years ahead in building up a more productive nation, a more progressive society.

A general summary of the progress achieved in different fields is given here briefly. Some detailed figures are listed at the end of Chapter V.

Achievements in Agriculture and Rural Development

Both the First and the Second Plans stressed the need to stimulate India's depressed agriculture and revitalize its backward rural society. Emphasis was put on setting up a national farm extension and rural community development service to bring the village people new techniques and outlook; on reform of those feudal and oppressive aspects of India's land system that were holding back farm production; on expanding irrigation on a widespread national scale so that crop yields would be less dependent on the unreliable monsoon rains; and on reclamation of waste lands for farming. The Second Plan worked towards specific increases in agricultural production as a means of raising rural incomes, employment and living standards.

Farm production has shown a consistent and unmistakable rise, averaging above 3 per cent a year over the ten-year period, although there is considerable variation between years due primarily to weather conditions. Yield per acre rose significantly—rice yields, for example, went up from 694 lb to 807 lb per acre on the average, although this

average is still well below yields on the better managed farms in India as well as in countries elsewhere*.

THE RISE IN FARM PRODUCTION

(Index : 1949-50=100)

	1950-51	1955-56	1960-61 (provisional)	% rise over 1950-51
All commodities	96	117	135	41
Food crops	91	115	132	45
Other crops	106	120	142	34

The increase in production of the most important farm commodities is given below :

	1950-51	1960-61 (provisional)
Foodgrains—cereals and pulses (million tons) ..	52·2**	76***
Oilseeds (million tons)	5·1	7·1
Sugarcane****(million tons)..	5·6	8
Cotton (million bales)	2·9	5·1
Jute (million bales)	3·3	4

The most significant farm programme was to introduce national farm extension and community development services throughout the country to reach the long isolated and backward rural people. By early 1961, the end of the Second Plan, these services covered 370,000 villages and

*The highest yield in India, demonstrated in crop competitions, varies between 3000—9000 lb per acre. This compares well with the yield per acre in Japan, for example, which averages about 4000 lb. Japanese yields are of course among the highest in the world and are achieved, as is feasible in India, largely through hand cultivation rather than mechanization. The challenge to Indian agriculture is to bring its low average up to the high standard already shown to be possible in India.

**Estimate of production adjusted for changes in statistical coverage, etc., up to 1956-57.

***Latest estimates indicate that foodgrain production is over 79 million tons.

****In terms of *gur*, or raw sugar.

a population of over 200 million, or well over half of India's rural people. At the block and village level there are today nearly 60,000 village level workers and extension agents, all of whom have been especially prepared for the job in a newly created nation-wide extension training system. A beginning was made to develop and strengthen democratically elected councils of the villagers themselves in development "blocks" and villages to carry more and more of the responsibility for local development.

Organization of farmers into rural cooperatives for farm credit, marketing and supplies is growing markedly. Membership in farm credit cooperatives is four times as high as ten years ago and farm loans have increased nine times. These farm credit services have been stimulated with help from the Reserve Bank of India.

Important land reforms were introduced. Long established feudal tenures such as *zamindari*, which began as a system of tax-farming, have been ended. Although reforms have not yet been as effective as hoped, more tenants today have been given somewhat greater security and most rents have been reduced to reasonable levels. Steps have also been initiated to reduce the inequalities of land ownership which are a heritage from India's past.

New irrigation projects, large and small, increased the irrigated area from 51.5 million acres in 1950-51 to 70 million acres; more and more of this new irrigation represents permanent year-round facilities. The large irrigation projects will, when fully completed, irrigate 38 million acres.

About 4000 seed farms were established during the Second Plan as the first step towards covering the entire cultivated area with improved seeds. The use of nitrogenous fertilizers increased over four-fold—from 55,000 tons (in terms of nitrogen) to 230,000 tons. Some 4 million acres of waste land have been reclaimed, green manuring has been introduced on about 12 million acres, and soil

conservation programmes have covered nearly 3 million acres. Considerable progress has been made to develop livestock, fisheries, safe city milk supply systems, vegetable and fruit cultivation, forests and agricultural and animal husbandry research.

Industry and Minerals

During the First Plan what was first proposed for large industry was chiefly to encourage the already existing factories to use their capacity to the full. Industrial production, even with this mild stimulation, rose by 39 per cent in the first five years.

With the Second Plan, it was realized that development of industry—particularly of basic industry—must be pressed hard if India were to meet the needs of consumers and its burgeoning small and large industries, and prepare to meet the even larger needs of the future. Stimulating and assisting private enterprise to enter and expand industries of national importance, the government itself took a strong part in starting those basic industries such as steel and heavy engineering which are essential for immediate and long-term industrial growth, and which were beyond the financial resources of private enterprise to expand as urgently and on as large a scale as necessary.

These efforts, plus the new confidence in India's future which arose as growth began in earnest, stimulated a vigorous increase in industrial production.

The Rise in Industrial Production

(Index : 1950-51 = 100)

	1955-56	1960-61	% rise over 1950-51
All commodities	139	194	94
Cotton textiles	128	133	33
Iron and steel	122	238	138
Machinery	192	503	403
Chemicals	179	288	188

The total ten-year gain in industrial production is, as shown, nearly double that in 1950-51. The actual increase was more than can be shown here, since a number of the new industries which are so striking a development in India's industrial growth are not as yet included in the index.

The following table gives some idea of the progress achieved in the production of important producer and consumer goods :

PRODUCTION IN SELECTED INDUSTRIES: A DECADE OF PROGRESS

		1950-51	1960-61 (expected)	% increase
Producer Goods				
Steel ingots ..	million tons	1·4	3·5	150
Aluminium ..	'000 tons	3·7	18·5	400
Diesel engines ..	thousands	5·5	40	627
Electric cables (ACSR conductors)	'000 tons	1·7	22	1194
Locomotives ..	number	7	295	4114
Nitrogenous fertilizers ..	'000 tons of N	9	110	1122
Sulphuric acid ..	'000 tons	99	363	267
Cement	million tons	2·7	8·5	215
Coal	million tons	32·3	54·6	69
Iron ore	million tons	3·2	10·7	234
Machine tools (graded)	value in $ million	0·71	11·55	1527
Consumer Goods				
Cotton textiles (mill made) ..	million yards	3720	5127	38
Sugar	million tons	1·1	3	173
Paper and paper board	'000 tons	114	350	207
Bicycles* ..	thousands	101	1050	940
Automobiles ..	thousands	16·5	53·5	224

Notable progress was made in basic capital and producer goods industries, especially machinery and engineering industries. Indeed, the progress of these industries is one of the promising assurances for faster growth towards

*Does not include production of small industries.

self-reliance in the future. Private steel capacity was doubled, from 1.4 to about 3 million tons*. Three new steel plants were begun by government, with foreign financial and technical assistance. With the completion of these plants India's total capacity will have increased to 6 million tons as compared to 1.4 million tons in 1950-51*. Production of steel ingots already is 2½ times as high as ten years ago—3.5 million tons as compared to 1.4 million tons. Production of other industrial materials like iron ore, cement, coal and aluminium, has also increased substantially.

The diversification of industry away from its early excessive concentration on consumer goods, to produce a wide range of new goods needed by a growing economy and for export, has also been one of the most significant achievements of recent years. India is now producing steadily increasing quantities of machine tools, of transport equipment, and of machinery for the traditional textile, jute, cement, tea, sugar and vegetable oil industries, as well as for new and growing industries.

The value of all kinds of industrial machinery produced in the country has risen from $38 million (Rs. 18 crores) in 1951 to about $336 million (Rs. 160 crores) in 1960, of electrical equipment alone from $15 million (Rs. 7 crores) to $97 million (Rs. 46 crores).

A beginning has been made in the production of heavy electrical equipment. The progress in chemical industries, including heavy chemicals, fertilizers, drugs and pharmaceuticals, etc., has been notable and India has increased its capacity for producing a wide range of primary organic chemicals.

Still another indicator of the country's industrial growth is the manufacture of a number of new products in the country for the first time, such as industrial boilers, milling machines, and other types of machine tools, diesel road rollers, industrial explosives, sulpha and antibiotic drugs,

*In terms of steel ingots.

D.D.T., newsprint. Under the Second Plan, modernization of the jute and cotton textile industries has also made progress. In a number of industries, many formerly imported components are now being domestically produced to save foreign exchange for more essential purchases. Much of the equipment required by the railways—locomotives, coaches and freight cars—is now available from domestic production, a very important achievement that will represent substantial future savings in foreign exchange.

Another notable feature of the past ten years has been the vigorous exploration and exploitation of India's promising natural resources, especially coal, iron ore and bauxite. Valuable, if as yet limited, oil reserves have been found for the first time and refining and distribution of oil have begun.

Consumer industries have not lagged behind, although there was a limit to which scarce materials could be put into the less essential goods.

Along with large and medium-sized industries, there has been considerable, and very deliberately stimulated, development of village industries and of small-scale industries, which are the significant "growing points" of the economy. Indeed, one of the striking social as well as economic changes of these past ten years is the dynamic growth of a vigorous expanding class of small businessmen and industrial entrepreneurs. Production of a number of small-scale industries like builders' hardware, hand tools, sewing machines, electric fans and bicycles has gone up sizably, the increase in production varying from 25 to 50 per cent per annum in the last five years. Production would have been far greater but for the shortage of raw materials, particularly steel. Small Industries Service Institutes have been set up in all States, with 53 specialized extension centres, to acquaint small business with new techniques and tools. Other new agencies have been created to provide credit and marketing facilities. About 60 industrial estates, providing facilities for about 1000 small factories using power, have been set up all over the country.

As for the more traditional hand industries of India, which provide considerable employment, between 1950-51 and 1960-61 the production of handwoven cloth increased from about 742 million to about 1900 million yards, and of raw silk from about 2½ million to about 3.6 million lb. The need to adopt improved techniques and tools in these industries is being increasingly recognized.

Foundations for India's advance in scientific and technological research have also been laid, through a large number of new research institutions and national laboratories and strengthened university research departments. Marked progress has been made in the field of atomic energy.

Power

Power and transport, both so essential to support development, have been expanded as rapidly as domestic and foreign exchange resources permit. India's power development programme has included new hydel and thermal stations as well as large river valley development projects. The installed power generating capacity has gone up nearly two and a half times, from 2.3 million kW to 5.7 million kW, although this was below the high target set. Power generation has trebled, to about 19.8 billion kWh. Almost two-thirds of this was used by industry, and demand has grown so rapidly that severe power shortages are from time to time felt throughout the country. Rural electrification made a small if promising beginning. The number of small towns and villages electrified increased from 3687 in 1950-51 to 23,000, although this is only a fraction of those villages which need and want power.

Transport and Communications

Rehabilitation of India's railways, which had suffered much damage on account of the war and Partition, was the main job during the First Plan. During the Second Plan, the emphasis was on extensive railway development, in large

part to support the building up of basic industries like steel, coal and cement. Railway freight traffic has nearly doubled over the ten-year period. About 1200 miles of new railway lines have been laid, 1300 miles of railway track doubled and 800 miles electrified. The number of locomotives rose to 10,600 or by nearly a fourth; there are today about 120,000 more freight cars, 50 per cent more than ten years ago.

There has also been good progress in extending and improving India's roads and road transport. About 46,000 more miles of new surfaced roads have been laid, to a total of 144,000 miles. There are today over 250,000 miles of unsurfaced roads, nearly half of which—100,000 miles—were put down in the last ten years. The number of commercial vehicles in the country has nearly doubled to about 210,000 and the quantity of freight moving by road has tripled. The annual handling capacity of major ports rose from 20 million tons to 37 million tons. Shipping tonnage more than doubled to 900,000 GRT.

Yet with all this increase in transport facilities, the railroads particularly have been operating under strain, and local and sometimes severe traffic bottlenecks, especially in industrial regions, have developed from time to time and point the need for considerably faster transport development.

An invigorated industry and commerce have put a heavier load on communication services and these have had to grow rapidly. To handle 80 per cent more mail, and reach into the villages, the number of post offices was expanded from 36,000 to 77,000—more than double; the number of telephone connections from 168,000 to 460,000—nearly treble. In broadcasting, every language area is now provided with at least one station, and internal coverage has been extended and external services have been strengthened. A programme to provide community listening sets in rural areas was begun.

Social Services

Education, health and welfare services—not only a public demand in any democratic nation today, but of such great importance to the years ahead—have been much expanded during the past decade. There are about 15 million more children of 6-11 attending school, or a total of 34 million. This is however still less than two-thirds of the children in that age group. The number of students in higher secondary schools and in universities has increased nearly 2½ times, to 3 million and 900,000* respectively. There are 132,000 more elementary schools (to a total of 342,000) today, or over 60 per cent more than ten years ago; the number of high schools and colleges has more than doubled.

To serve India's new needs today and in the future, a strong beginning has been made to expand technical education. About 40,000 students now join courses for engineering every year, four times as many as ten years ago. Each year nearly 6000 enter institutions teaching agricultural and veterinary sciences, again four times as many as in 1950.

In the field of health as well, India's gains have been noteworthy and have considerably increased life expectancy. Mass control of preventable diseases has had a high priority. Malaria, which ten years or so ago affected 75 million people and probably caused 800,000 deaths a year, has been cut down to 10 million cases a year, through a nation-wide control programme. In the next few years it is expected to be wiped out entirely. During the Second Plan alone, 120 million people were given BCG vaccinations against tuberculosis. India made its first start on providing a nation-wide system of rural health services as part of the community development programme and there are now

*This does not include the 146,000 additional students in engineering, medicine, agriculture and other higher technical institutions.

2800 health centres in the villages. The number of hospitals and dispensaries and hospital beds has considerably increased—by about 47 per cent and 65 per cent respectively. There are now nearly twice as many medical colleges, (a total of 57) and 70,000 doctors (14,000 more than in 1951) in practice. A nation-wide family planning programme was initiated in the First Plan and is expanding steadily. India today has about 1650 family planning clinics. Even with this start, sustained intensive efforts are needed to make family planning a successful nation-wide popular movement.

A start was made on slum clearance and improvement and on providing housing for industrial workers and low income groups. A small beginning was made on improving rural housing. But funds available for these purposes were small and the impact negligible. The problem of housing, especially in the fast-growing cities, is causing real concern.

Special social welfare programmes were started for India's tribal people, Harijans and other backward and depressed groups. Altogether some 6.2 million acres of land were allotted to people from these groups and 68,000 young men and women from such groups were given college scholarships.

Following Partition, about 9 million displaced people from East and West Pakistan had to be given relief and rehabilitation—one of the major jobs of the First Plan but to some extent also of the Second Plan period.

What the Ten Years of Development Cost

One of the main achievements in terms of India's future has been the sharp step-up in the proportion of India's income invested in development. Today 11 per cent of India's total income is devoted to development as compared to 5 per cent ten years ago. While this is still not as high as in some developing countries, the sharp increase in the rate is as encouraging as it is significant.

Total investment in development over the first two Plan periods is about $21,231 million (Rs. 10,110 crores)*, of which $10,941 million (Rs. 5210 crores) has been spent by government, $10,290 million (Rs. 4900 crores) by private enterprise. For the government, these costs are over and above the normal costs of running the State and Central Governments, and of meeting national needs of defence, basic postal and other services and general administration. Taken as a whole, the cost of *development effort alone* has been over half of India's total government expenditures during the last decade.

To meet the costs of the First Plan, India relied almost entirely on its own resources, with foreign assistance from the U.S., the Colombo Plan and other sources, making up the "vital balance" of 10 per cent of the total development costs.

The Second Plan, a larger effort, calling for far faster growth in the dynamic parts of the economy, has required more than twice the developmental expenditures of the First Plan on the part of the government, and nearly twice as much by private enterprise in various fields.

To increase the rate of investment so substantially and pay for its development, India has increased taxation and savings, drawn down its own foreign exchange reserves to the minimum working level and held down consumption of non-essential goods, both domestic and foreign, to minimum needs, by various measures, such as control of imports and rationing of scarce materials. In the earlier years of the Second Plan it also used a fair measure of deficit financing. By these means India raised out of its own resources about three-fourths of government's total development costs in the Second Plan. To purchase the heavy capital machinery and materials necessary, most of which in this first crucial stage of the developing economy must as yet be purchased abroad, India during the Second Plan period

*At current prices. Investment in the First Plan was $ 7056 million; in the Second Plan, more than double, $ 14,175 million. Chapter V gives more precise details.

used $2289 million (Rs. 1090 crores) of foreign grants and loans, besides foreign private investments.

Lessons for the Future

Among the problems, the growing pains, experienced over the last five years, some could be anticipated. Others could be fully realized or even discovered only in the actual attempt to push a traditional and under-developed economy forward very rapidly.

Any appraisal of this ten-year development period must point to those stresses and strains and special problems that have arisen, and to those programmes which fell below expectations.

An outstanding fact of the Second Plan period is that population has grown at a far faster rate than was expected. Population in 1961 is now estimated, as we know, to be 438 million instead of the 408 million anticipated at the start of the Second Plan. The growth in population alone has absorbed over half of the nation's increase in total production. This has emphasized, with sharp force, the larger demands that will be made upon the economy in the future merely to meet the year-to-year needs of the rising population.

Both agriculture and industry have had their special problems. In agriculture, use of irrigation facilities has been below what was hoped, partly because of delays in building the major irrigation projects and field channels, and partly because farmers in some parts of the country need prolonged and intensive education to shift to "wet" cultivation techniques from their traditional methods of dry farming. The development of a more effective farm extension service, and of close coordination of all agencies concerned with farm production in over half a million villages, have presented new and vast problems of organization and training. The importance of providing farmers with more fertilizers, improved implements and seeds and credit, in

addition to extension services and technical help, has become particularly clear over recent years.

In industry, although in other fields as well, such as minerals and transport, it has been found that the "gestation" period—the time it takes for any project to go from the planning stage into actual production at full capacity with all the needed trained staff, new skills, services, raw materials, and transportation—has in some cases been longer than anticipated. Even advanced countries, mobilizing production under the strain of war or depression, have on occasions experienced similar difficulties. In an underdeveloped economy, which must expand and enter new and difficult fields on a larger scale, and which faces shortages of management, manpower and materials as well as of foreign exchange, the problem is inevitably accentuated.

A significant experience was the necessity in 1958 to reduce the size of the Second Plan. One reason for this reduction was the heavy pressure of domestic demands on the economy, which began to respond far more rapidly than anticipated and thus raise domestic prices. To a considerable extent, however, it was due to the critical shortage of foreign exchange showing up early in the Second Plan period. In part this exchange shortage arose from the placement of unexpectedly large import orders by a revitalized private industry in the early years of the Plan (under what was then a more liberal import policy) and the later heavy import requirements of programmes of basic industries initiated by the government. In part, it was due to the rise in world prices for these imported goods. The cost of equipping new plants and of providing supplies for an expanding economy was considerably larger than first estimated.

Even though India's foreign exchange reserves were drawn down to a minimum working level, the over-all shortages of foreign exchange forced a severe cutback in many key development efforts—in power, fertilizer production,

transport and in starting other important projects. It also made it necessary to put severe import restrictions on all but the most critically essential purchases of foreign machinery and raw materials. Foreign assistance was received on a much larger scale during the latter part of the Second Plan and this help from friendly countries has assisted Indian development significantly. This has, however, added to future repayments, some of which will be falling due in the Third Plan.

Cutbacks in power, foreign raw materials and machinery imports have held down the growth of industry and industrial production. Shortages of domestically produced fertilizers have played a part in holding back agricultural production and made necessary large and continuing imports of food and other farm commodities.

Some valuable lessons, however, have been learnt out of this experience. The realization that the early stages of growth mean a continuing tight foreign exchange position has been borne home, and India, in both its government and private sectors, has developed experience in calculating for and managing with an exchange-short economy under pressure for development. Over the past ten years, moreover, considerable experience has grown up in India's economic relationships with other countries, both the underdeveloped and the advanced nations, and in working with foreign governments and international lending institutions in the planning and management of foreign grants and loans.

Summarizing in specific terms, then, some of India's gains over the last decade, we find that although farm production has risen markedly—41 per cent as we have seen—it has not risen fast enough to meet demands. Its relatively slow rate of growth is indeed one of the major limiting factors in the growth of the economy as a whole. Again, while industrial production has nearly doubled, important industries, especially those showing the most marked growth—

such as iron and steel, coal and washeries, power, transport, fertilizers and chemicals, aluminium, newsprint—have for one or more of the reasons given above fallen behind the high targets originally hoped. As a result of these lags, and of shortages of certain critical raw materials, growth in other industries has been held back; and on the one hand, higher imports have been required and, on the other, the growth of exports has been inhibited. Export earnings, so vital a factor in self-reliant growth, have not risen over the Second Plan. Less developmental and consumer goods have been available, and the expansion or even the start of some projects has had to be postponed to the Third Plan.

With shortfalls in production in both agriculture and industry, national income has not been able to come up to the 25 per cent target of increase hoped for during the Second Plan. Also with the unanticipated increase in population, per capita income and living standards have not reached the levels planned. While in wholesale price index has risen only by 25 per cent from 1952-53 to the end of 1960, inflationary pressures of a developing economy were more evident in price rises during the last two years. Moreover, India has not yet increased sufficiently the proportion of its own income devoted to investment in development.

It was hoped that 8 million additional job oportunities would be created outside of agriculture over the Second Plan period. The gain is now estimated to be about 6.5 million. This increase in job opportunities, sizable though it is, has not been big enough to provide employment for all those who over the last decade have come of age to seek and need work. The Second Plan ends then with a larger backlog of unemployment (9 million) than when it began, and forecasts the enormous pressures for more employment in the coming years.

The experience of the past decade, and more particularly of the Second Plan, has thus pointed up both needs and methods for getting the utmost and earliest results and

benefits from India's growth, and to raise larger resources for development. The need to manage carefully scarce Indian or foreign supplies has meant a turn towards a more austere economy focussing on high efficiency, on local production of substitutes, on a greater emphasis on skilled management and manpower. It has brought about, too, greater understanding of the many complex problems of an economy struggling to find its way out of the deep-rooted poverty of the past.

Adding up, however, all the gains and costs of the past ten years and seeing them against the background of the stagnant economy of the previous decades, there is no doubt that this has been an inspiring new period in the nation's history, one in which India has made significant advances and begun to lay a strong base for much faster growth in the future.

At the same time, as we know, the advance is not great enough; it is not fast enough. India's goal is to double national income by about 1973 and markedly step up living standards in 15 years in spite of population increases. Looking ahead at these goals, it is obvious that the point where the Indian economy can grow fast enough and also go forward largely on its own, has yet to be reached. To reach it, India must sharply speed up both the scale and vigour of its efforts. The Third Plan, and the next decade, thus represent a vital stage in the country's development.

CHAPTER IV

APPROACH TO THE THIRD PLAN

THE Third Plan has been shaped therefore with a fresh sense of urgency. It is not only the next step in the long upward journey to a better life for the Indian people. It is a new stage in what India realizes must be a period of far more intensive development. This period, extending at least over the next 15 years or so, must see a tremendous upsurge of growth, big enough to enable India not only to meet the rising expectations of a rising population, but at the same time prepare itself for a faster race in the future with less and less dependence on foreign aid.

Many considerations then have gone into fixing the size and shape of the Third Plan itself—what specific goals it must set now, what its highest priorities should be, how big a plan India can successfully carry out and afford without inflation, how much funds are likely to be available to put into it.

India hopes to accomplish as much in the next five years as it has in the past ten. To do so, the Third Plan has set itself five specific goals :

1. to enable the economy to grow at over 5 per cent a year and keep up at least this pace over the future;
2. to achieve self-sufficiency in food production, and step up all farm production far enough to meet the growing needs of industry and exports;
3. to expand basic industries like steel, fuel and power, and establish machine-building capacity, so that in a decade or so India can develop industrially largely out of its own resources;
4. to create considerably more employment opportunities and increasingly use India's manpower resources to the full; and

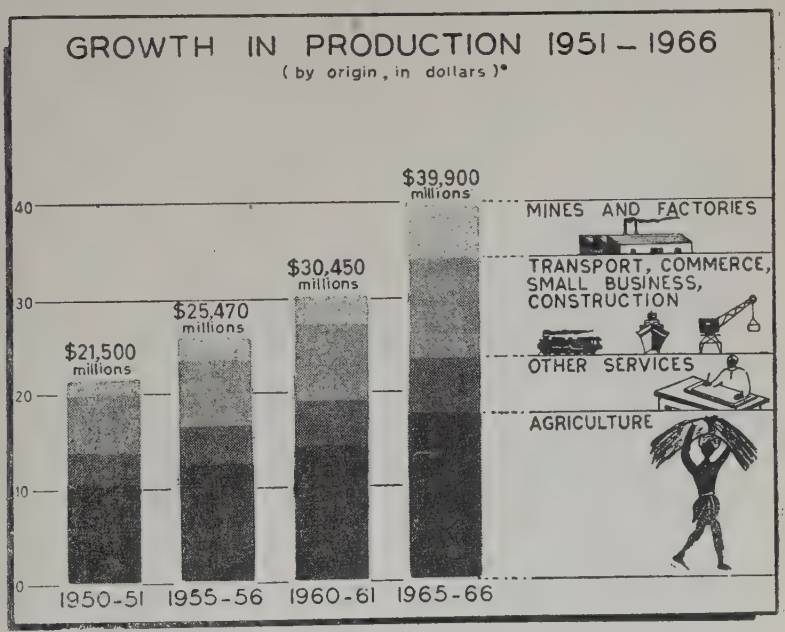
5. to ensure more equal opportunities, a reduction of inequalities in income and wealth, and a more even distribution of economic power.

These aims have grown out of the experience of the past ten years, and reflect the renewed concern to grow faster and the confidence that faster progress is possible.

India Must Grow Faster

What is clear from the experience of the last ten years and from the fast rise in population is that India must speed up production—from all parts of its economy to a still more rapid rate. Over the past decade production has been rising at the rate of somewhat less than 4 per cent a year, and totalled about 20 per cent for the five years ending in March 1961.

This is a significant growth rate, compared to the long stagnation of the past. But it is clearly not enough to produce



* at 1960-61 prices

the goods, income and employment needed today and build the base for future development. With India's large increases in population, income per person has gone up somewhat less than 2 per cent a year. Considering India's low incomes, this has meant an average of only about $1* (Rs. 5) a year more per person to spend on better living standards. As we have seen earlier, looking at India's growth over the long run, India must get close to a 6 per cent gain a year if it is to meet present needs and plough back enough into future and more self-reliant development.

The first goal of the Third Plan is therefore to achieve over 5 per cent increase in total production a year, and to be able to keep up at least this rate of growth over the years ahead. This rate of growth, moreover, will permit a significant rise in incomes, and, at the same time, give India sufficient resources to invest in future growth without undue inflation.

To step up the rate of growth so sharply will not, as pointed out earlier, be easy. But in part the foundations for more rapid growth have been laid. India's economy is now bigger, and in many important fields more dynamic, more complex. Basic industries and facilities such as power and transport already started and to be expanded will make possible more and faster production. Even so the targets of growth can be reached only with a tremendous effort. All parts of the Indian economy must be pushed to the utmost; all possible resources raised within India in addition to heavy dependence on foreign assistance.

If India does achieve a rate of growth of over 5 per cent, it will have pushed up its total income by 1966 to $39,900 million (Rs. 19,000 crores)**. Income per person, in spite of population increases, will be about $81 a year—$12 more

*In terms of purchasing power.

**At 1960-61 prices, this will be roughly equal to the (1959) income of France which had then one-eleventh as many people.

than today. India, as a democracy, considers these to be its minimum income targets.

But India's growth cannot be concentrated on raising living standards alone. What India must do over the Third Plan, and over the next Plans as well, is so to pattern its growth that it not only meets essential immediate needs but also builds for the future, and progressively becomes more self-reliant and less dependent on foreign aid.

This basic strategy explains the next two goals of the Third Plan. First, the Third Plan must give a very high priority to an immediate and radical increase in farm production—particularly to producing enough foodgrains to be self-sufficient. Next it must create within India, at the earliest, the capacity to produce the industrial goods and equipment needed for its development at home and for stepping up exports abroad.

Self-Sufficiency in Food

The urgent need to be self-sufficient in foodgrains is only too clear. Food production has been rising by about 4 per cent a year, in itself a fair increase. But it has not been rising fast enough to enable India to feed itself and India has had to import each year for the past five years an average of over 3 million tons of foodgrains alone, valued at roughly $294 million (Rs. 140 crores) a year, or over $1470 million for the five-year period. A considerable proportion of these imports has been financed with foreign help. Moreover the slow rate of growth in farm production is one of the main factors now holding back the growth of the economy as a whole, and especially the advance of the rural people themselves.

Rising population and rising incomes over the next five years and more will bring bigger and bigger demands for food. If India's food production is not stepped up far more rapidly, there will be a serious gap between food production and needs of the population—a gap too large to be covered by imports or rationing. To raise enough food for the growing

population and to keep food prices down, farm production has to increase nearly twice as fast in the five years as it has during the last decade.

Foodgrains are of top importance. But producing more of other farm products—cotton and oilseeds, for example—is essential too. In the past year, India's cotton crop was below expectation and substantial imports had to be arranged to keep looms running and cloth prices down. Moreover, India must increase production of other agricultural commodities which it traditionally exports—jute, tea, oilseeds as well as cotton—to earn foreign exchange and thus reduce the need for foreign aid.

Import-Saving, Export-Earning Industries

Similarly the need to assure a *future* rise in living standards and cut down dependence on foreign aid at the earliest leads to the Third Plan's other aim—to develop on a high priority basis, India's basic industries, particularly machine-building, metallurgicals, chemicals and electrical equipment. It is these industries which largely determine the speed with which the economy can grow in the future, and become more "self-generating" and self-reliant.

Imports of such industrial goods have over recent years made a heavy demand on foreign exchange and foreign aid—even though all imports have been cut to an absolute minimum.

Most of these goods, as we have seen, can well be made within India, many of them at considerably less cost, if India can get the foreign exchange to build the plant capacity. Since the amount of foreign exchange and aid required to build these plants is substantial, it will be helpful to illustrate their importance to India's future growth and the practical and sizable savings in foreign exchange that can result rather quickly from building them within India.

Take the case of steel. one of the outstanding examples. Imports of steel over the past five years of the Second Plan

have cost about $1200 million in foreign exchange and aid. This is more than the complete foreign exchange cost of the three new steel plants (plus expansions of other private steel plants) that were built in India over the same period. It is expected that production from these new plants, by saving on imports, will "save" their foreign exchange costs in a little over two years of production. They will, moreover, make more steel available at reasonable cost for many development purposes—for building fertilizer plants, manufacturing farm implements, expanding transport and producing essential consumer goods.

Other examples are those of railway and power equipment. Over the Second Plan modernization and expansion of India's 100-year old railway system have cost nearly $ 700 million in foreign purchases alone. To equip India's new power plants has cost $400 million during the Second Plan in foreign purchases of generators, switchgear, etc. India has already shown that it can readily make much of this equipment efficiently. The Third Plan must rapidly expand India's manufacture of heavy engineering and electrical equipment, to cut down its dependence on foreign aid substantially as it develops its transport and power over the future. Another related example is that of fertilizer, of which India will need enormous quantities. India has been obliged to spend more foreign exchange in importing fertilizers during the last five years than the amount used in building its own fertilizer plants. The foreign exchange cost of a single fertilizer plant can be "saved" in two years of domestic production.

This is not to say that heavy imports of railway and power equipment as well as other machinery, and of fertilizers and steel will not be necessary over the next few years. They will, and most of them will need to be financed by foreign help. But by building its own plant capacity during this period, India will become more able to satisfy its future needs with less and less reliance on foreign aid.

At the same time that India builds capacity to produce such basic goods for its own needs to *save* foreign exchange, it is also of course increasing the variety and potential of exports which can *earn* foreign exchange. As we have seen earlier, India's main promise of being able to pay its own way in the years ahead lies precisely in producing, through development of diversified industries, a wide variety of such manufactured goods for export.

Clearly then, a high priority on basic industries in the Third Plan, as on agriculture, is a necessary assurance that India can meet its essential needs in the future and be able, within the shortest feasible time, to work itself progressively free of dependence on foreign assistance.

Creating More Employment

Another major aim of the Plan is to create more employment and use manpower to the fullest extent possible.

The Third Plan not only begins with a larger backlog of unemployment—altogether 9 million—than the Second Plan, but faces the prospect of 17 million more people coming of age to seek and need work over the next five years. While, as we have seen earlier, it is difficult for an under-developed economy in the early stages to provide full employment, the Third Plan puts a higher priority than any previous Plan on using India's vast reservoir of labour as an organized force to help meet its key production targets. Programmes now included in the Plan on a priority basis will be worked in such a way that they create the most employment, using manual labour wherever economically feasible, especially in construction. Those Plan programmes which can use the most manpower will be among the first to be speeded up and enlarged. Essential small industries—which are important "growing points" in the economy and which, therefore, offer large possibilities for employment—will be stimulated to the utmost. A nation-wide rural works programme designed to use additional manpower in an organized manner for work

essential to farm improvement and production—irrigation, land drainage, soil conservation, road building, reforestation, etc.—is being launched. In all cases, areas where unemployment is high will get particular attention.

Present estimates are that the Third Plan development programmes should provide directly and indirectly about 14 million jobs. The rural works programme will provide employment by 1966 for 2½ million of the new arrivals in the labour force, most of whom will be in rural areas. Pilot projects have already been started to discover the best means of organizing rural workers effectively.

Creating More Equal Opportunities

The final goal of the Third Plan is one that pervades and underlies all others—to bring about more equal opportunities for all and lessen inequalities which have in the past not only defeated social justice but held back economic growth itself.

Some special measures have already been mentioned; such as the spread of education, especially technical education, of health and other basic social services, direct assistance to under-privileged tribal people and depressed groups, special attention to improvement of living conditions and employment in city and village, more tightly enforced land reforms, tighter tax laws and enforcement to reduce the spread between high incomes and low.

In both the short and long run, of course, the crux of the problem of assuring all groups more equal opportunities is only partly one of correcting existing inequalities. Its more important aspect is the need to create conditions in which the economy grows rapidly as a whole so that more of the low income groups can find productive and better paying jobs and inequalities can be reduced all along the line. The overriding objective, as we know, of all of India's development, and particularly of the Third Plan as the next stage in development, is to speed up India's growth so that all may share

in the nation's expanding production and the lowest income groups may come up as rapidly as possible to the level of the rest.

The Need for Simultaneous Development

Looking at all the Third Plan's goals and aims in perspective, what is clear is that India must develop all the major aspects of its economy simultaneously. In any country, whether far advanced or only in the process of development, there is an intensely close inter-connection between the various major aspects of development. This is particularly true in India today at its present stage of growth. From the Third Plan's decision to give top priority to one aspect flow other necessary decisions.

For example, the decision to make a radical step-up in farm productivity demands immediate support from other parts of the economy in the Third Plan. Thus a high priority must go at the same time to Indian industries which can produce the supplies farmers will need—fertilizers, insecticides, implements, food processing and storage equipment. These industries will require more coal, more power, more transport, more trained manpower—and all of these facilities must also be developed on a priority basis during the Plan.

Since more rural labour will be used for irrigation, drainage and soil conservation work, wider employment, along with bigger crop yields, will mean higher rural incomes. Higher incomes in turn will bring about a rising demand throughout the Third Plan not only for food but manufactured goods—sugar, cotton textiles, sewing machines, bicycles, radios. Even though consumption is held down somewhat, to produce even a minimum amount of these goods for a population of India's size means devoting some of the Third Plan's resources to such essential industries, and providing support for these industries in coal, power, trained manpower, transport.

Finally, to expand in any or all these directions during

the Third Plan requires more widespread education and technical skills, and at least minimum social services such as health and housing—all essential requirements in a democracy which depends on widespread public cooperation and understanding to achieve its goals.

Taken as a whole, then, the Third Plan clearly has to go ahead very vigorously on all these priority fronts. It cannot press one priority at the expense of another. The experience of countries elsewhere, moreover, which have tried to speed up development sharply, indicates quite clearly that no one major phase of an economy can be developed alone, without causing dislocations and even social tensions.

Obviously here the very difficult question arises of keeping all the Third Plan's key programmes in balance. The utmost care is needed to see that development in each field is balanced at all times so that shortages and bottlenecks do not develop—shortages of fuels, power or transport, shortages of trained manpower, shortages of domestic resources and foreign exchange for priority programmes. Timing and phasing of key development programmes are therefore of exceptional importance and are one of the major tasks of planning for the Third Plan. The very large component of foreign exchange and aid necessary at this stage of development, the need for it in time to get production underway, accentuate this problem of timing and phasing.

The Size of the Plan

To develop and develop fast on many fronts at once means a big Plan. How big the Plan can be is one of the most important aspects of an approach to the Plan and has had to be most carefully determined.

On one side are the goals and targets of the Plan just discussed—the big step-up in the rate of growth, the powerful new effort needed to increase farm production, to build for India's present and future industrial needs and work towards self-reliance, to provide more employment, educa-

tion and social services. In the wide discussions held on the Plan over the last year and more, there was strong public opinion from all levels of Indian leadership in and out of government that these were the minimum demands, and represented the minimum size of the Plan.

On the other side, the real question is how far or fast India can go in the next five years towards meeting these needs? How much resources can be raised for development over and above the normal costs of running the country? In short, even with help from outside, how much can the economy "stand" without undue inflation?

Very careful judgements have been made on the amount of resources India can raise inside the country, both through present taxes and other revenues and new and heavier taxes and through increased voluntary savings. The resources needed for the Plan, as discussed in later pages, are distinctly higher than the estimates of resources immediately available. To force the pace of development there must be a strong effort to muster resources on a large scale. The estimate of the size of the Plan is based on the assumption that this effort will be made.

Because of its low incomes, India's level of savings has been relatively low even compared with many countries that are pushing hard at development. To achieve the Third Plan goals this level must be raised substantially, from the present rate of over 8 per cent of India's total income up to over 11 per cent. The Plan includes specific proposals for tax measures and savings policies to draw out this additional amount for investment in development. These proposals are discussed in the following pages. With the progress India has achieved so far, each year the economy is better able to stand—and must stand—a progressively heavier tax burden.

At the same time, a judgement has been necessary of how well organized India now is to carry out a bigger Plan, of how far it is now ready to run if it is given a strong enough push. The foundation laid over these past ten years,

the growth in competence, technology, managerial and planning skills, the greater knowledge of the problems of development, support India's conviction that a substantially larger effort over the next five years is not only necessary but possible. Nevertheless, extraordinary efforts of organization and management are required and assumed in setting the size of the Third Plan.

The size and nature of the Plan is also based on an estimate of the foreign assistance that may reasonably be expected from abroad. The assurance given early this year by friendly countries and the World Bank and other international agencies, of substantial foreign assistance for the first two years of the Plan, plus the earlier assurance of the U.S. Government of larger supplies of foodgrains and agricultural commodities (under U.S. P.L. 480), has strengthened India's ability to launch upon a Plan of this size and character.

As we have seen earlier, foreign aid as well as foreign capital are extremely important at this stage of India's growth and the value of the foreign assistance made available in the past cannot be over-estimated. Over the Second Plan, the foreign aid received represented a significant part of India's total income invested in development, but even more important, made it possible to procure the power generators, machinery and other goods without which India's pattern and rate of development would not have been possible. With the proposed step-up in India's own savings for the Third Plan to over 11 per cent, foreign aid makes possible investment in the Plan at a rate of 14 per cent of total income—the rate necessary to reach the Plan targets set. Again, it will also make possible procurement of the development goods essential to starting and running key development projects.

On the basis of all these considerations—of the demands and the resources and organization to meet them—the size of the investment in the Plan has been set at $21,840 million. A plan of smaller scale would be altogether inadequate to

meet India's targets and needs. It would also be below what should in fact be achieved if the economy and all its resources are sufficiently mobilized and organized and if all its programmes are carried out with the utmost efficiency and effort.

Living Standards and Prices

With so much funds being put into essential development, two key questions arise: What about living standards ? What about inflation?

The first answer is that the specific purpose of the Third Plan, and India's development as a whole, is to raise living standards. There is no question of cutting them below their present very low levels. But living standards cannot at this stage of development be allowed to rise without restraint, since considerable investment is necessary today in projects which will "pay off" in higher living standards only in the future. Holding back the increase in consumption today, then, is a necessary means of making more savings, and resources available for development. This can be—and will be—done not only by imposing higher personal and other taxes and encouraging more voluntary savings but also by putting some restraints on too fast an increase in production and use of less essential consumer or other goods.

Here the problem of prices comes in. A fast-growing economy, where considerable investment is taking place, tends in every country to push up prices because of the rising demand for all types of goods. The Plan cannot be so large or so designed that it contributes to undue inflationary pressures, especially in the cost of essential consumer goods, since this would seriously affect and hurt most of the population.

During the First Plan prices stayed down, but began to rise rather rapidly from the very beginning of the Second Plan in 1956, in part because food production was not keeping pace with the increase in demand. Within the past two

years, although food prices have been holding steady, there is an indication that broader inflationary forces are at work due to heavy demands for raw materials and manufactured goods and to foreign exchange shortages. Determining the size of the Third Plan, therefore, has involved a very careful judgement of what the economy could "stand" without overall and undue inflation.

Here allocation of Plan expenditures is important in assuring that enough essential consumer goods are produced to hold prices relatively steady as demand for them increases.

Essential consumer goods in India are largely food and cloth; these together take up nearly 70 per cent of family incomes for the vast majority of India's people, and are the basic needs which must be provided for. A rise in food prices is particularly important not only because it so closely affects the living standards of hundreds of millions of people—and especially the vulnerable low-income groups who are the vast majority—but tends to push up all prices.

What the Third Plan proposes to do, therefore, is to see that more of the essential consumer goods like foodgrains and cloth are produced to maintain and gradually raise living standards and hold down prices. We have already seen that the Third Plan target is self-sufficiency in foodgrains and a considerable step-up in the production of cotton and other farm products. The fact that India has in hand about 17 million tons of foodgrains supplied under P.L. 480 gives an additional assurance that food prices should not rise unduly over the Plan. Higher production of cotton, oilseeds, etc., is also proposed—enough to provide somewhat more per person than today, even with the expected rise in population.

But in spite of greater efforts to increase the production of essential goods, and with every balance and safeguard, some —possibly some disturbing—price rises are still possible. Even a 5 per cent drop in farm production, for example, as a

result of poor monsoons, can raise prices substantially. Since restraints on consumption cannot always be fully effective and incomes will be rising, demands will continue to push up prices. Inevitably too, some shortages will occur from time to time as one development programme may get farther ahead than another. Strong promotion of exports will also inevitably mean some restraint on use of these exportable goods within India. Otherwise their prices will rise and adversely affect export at competitive prices.

Some of the constraints that will be put on demand (and thus on prices) have already been mentioned, such as higher taxes and savings. Tighter monetary and fiscal policies will also be used. Even then, prices of luxury and less essential goods may have to rise; these do not, however, affect the vast majority of the Indian people.

On food products, however, the government must keep itself ready to assure plentiful supplies and thus keep down prices by various measures—open market purchase of grains, discouragement of speculation and hoarding, trading by cooperative agencies and, where necessary, by government, plus adequate storage facilities that can assure an even flow of grains to market, at fair prices to farmers, and thus keep prices stable locally as well as nationally.

On other essential commodities, the government during the Third Plan has to keep a close watch on prices and be prepared to take action before difficulties became acute. At times for certain commodities the government may have to apply more direct controls. It already has a variety of possible measures it can use—for example, powers to regulate prices of steel, coal, cement, raw cotton through direct price control authority and excise taxes and other measures.

Price controls are a complex problem at best. What is essential is that whatever price control measures are used over the Third Plan, they work effectively to hold down consumption and give the utmost savings for development on

the one hand and on the other assure that neither basic living standards nor desirable production are affected.

Looking again at the broad aims of the Third Plan, we see that the whole purpose of the Plan and of development itself is to increase production of essential goods which permit a moderate rise in living standards and at the same time to increase investment today in the kind of development which will yield more employment, incomes and opportunities in the future. The primary task of the Plan is to achieve these targets.

THE THIRD FIVE YEAR PLAN
1960-

THE BASIC AIMS

—A growth rate of over 5% a year or 30% over the Third Plan period; the foundation laid for a "self-generating" economy

—Self-sufficiency in foodgrains production

—Expansion of domestic industrial capacity to make India in 10 years or so largely independent of foreign aid for its industrial development

—Maximum use of manpower, and substantial expansion of employment

—Progressively greater equality of income and opportunity for all groups

THE TOP PRIORITIES

—Development of agricultural production and the rural economy

—Development of basic industries like steel, fuel, power and machine-building capacity, with highest priority given to industries which are export-earning and import-saving

—Improvement of education, health and social services

WHAT THE PLAN WILL COST

—Rs. 10,400 crores or ($ 21.8 billion) will be invested in economic and social development over the Third Five Year Plan period, Rs. 6300 crores by the Government, Rs. 4100 crores by private enterprise. The total compares with Rs. 10,110 crores invested during the 10 years 1950-51 to 1960-61

KEY TARGETS

Rising Living Standards

—A 17% rise in income per person, from $ 69 (1961) to $ 81 (1966)

HLIGHTS AND KEY TARGETS
55-66

—Free compulsory education for all children 6—11 years, and a school within reach of every village

—Safe drinking water for nearly all villages

—Electricity for all cities and towns with over 5,000 population and for 5% of all villages

—Roads linking every village to the nearest main road or railway station

—Nation-wide rural medical facilities, eradication of malaria and extension of family planning facilities

—14 million more jobs and employment opportunities

A More Productive Agriculture and Rural Economy

—Agricultural production to be stepped up by 30%

—20 million more acres irrigated, bringing up the total to 90 million acres, or more than half of India's irrigable area

—All of rural India reached by the community development farm-extension programme

—Key districts in every State put under an intensive food production drive

—Productive works programmes using rural manpower

A Foundation for Self-Sustaining Industrial Growth

—A 70% increase in industrial production

—Steel production to go up to 6.9 million tons and capacity to be increased to 10.2 million tons

—Priority development of machine-building and engineering industries

—Rapid expansion of basic chemical and drug industries, and a seven-fold increase in fertilizer production

—Intensified production of basic raw materials

—Power production more than doubled, to 45 billion kWh

—An increase of 59% in freight carrying capacity of railroads

CHAPTER V

THE THIRD PLAN IN OUTLINE

THE heart of the Third Five Year Plan, 1961—66, then, is to step up, and step up with great intensity, the efforts of this past decade of development. Building on the past, putting in the utmost in new resources and effort, it must accomplish in the next five years as much as has been done in the last ten.

Outlined here are the decisions on the priorities and targets of the Third Plan and the amount of resources and effort expected and proposed for each category of development. They represent, in the view of India's State and national leaders, the minimum effort that the country must make to meet the immediate and future needs of its people and to cut down progressively the country's dependence on foreign aid.

THE KEY TARGETS

One way to visualize the Plan readily is to look at its key targets. A bird's-eye view of these targets in every field of development is given at the opening of this chapter.

The most significant of these, for today and the future, are what India expects to achieve in national and per capita income and in key fields of production. In the next five years, India expects national income to go up at least by 30 per cent—which is an average rate of growth of over 5 per cent a year. If all the programmes proposed for the Third Plan are carried out in full, the increase may be higher—as much as 43 per cent. But some of the projects are new and complex and will, as experience has shown, take time to get into full production; some may be slowed by shortage of resources. Therefore a more realistic figure is 30 per cent. This will mean, as we have seen, a national

income in 1966 of $39,900 million (Rs. 19,000 crores)* compared to $30,450 million today, and permit income per person to go up by about 17 per cent from the present $69 (Rs. 330) a year to about $81 (Rs. 385), taking into account the very large increase expected in population.

Other key targets for the Third Plan are again in farm production of 30 per cent and for industrial production of 70 per cent. Thus both industry and agriculture are expected to rise nearly twice as fast as over the past ten years and lay a stronger base for even faster growth in the next decade. Another critical target is employment. New employment in development projects alone is expected to rise by some 14 million jobs, with a rural public works programme providing, by the last year of the Plan, work for 2½ million more.

Such then are the high targets of the Third Plan and an indication of the tremendous effort, the enormous step-up in growth proposed—and imperative—if India is to take care of its rising population, meet their present and future needs and become progressively less dependent on foreign assistance.

The Size of the Plan

To reach such high targets and thus meet its present and future needs, the size of the Third Plan is substantially bigger than the Second Plan, whether measured in terms of public and private investment or of government expenditures alone.

Looking first at the size of the total investment in the Third Plan, the figure for total private and public investment is $21,840 million (Rs. 10,400 crores)*, about 50 per cent more than in the Second Plan, allowing for the increase in prices.

Private investment is expected to rise substantially. These expectations are based on present trends and on discussions with committees and groups of leading industrialists

*At 1960-61 prices.

on their plans for expansion. Except for the larger industries, however, investment figures for private enterprise are necessarily rough.*

INVESTMENT IN INDIA'S DEVELOPMENT

(in millions of dollars)**

	By Private Enterprise	By Government	Total Investment	Investment as % of national income (last year of Plan)
Second Plan*** ..	6510	7665	14,175	11
Third Plan**** ..	8610	13,230	21,840	14

Government investment will, as is shown, move up even faster than private, and will constitute nearly three-fifths of the total investment in the Plan. The direct foreign exchange needed for investment by private enterprise and government together is $4263 million (Rs. 2030 crores), about a fifth of the total direct investment in the Plan.

While the size of total investment in the Third Plan is not large for a country so big as India, what is particularly significant is the step-up in the *rate* of investment in development. By 1966 private enterprise and government together

*During the Second Plan, private enterprise invested considerably more —almost 30 per cent more—than was originally calculated in the Second Plan. The original estimate in the Second Plan was that private enterprise would invest only $5040 million (Rs. 2400 crores).

**Given in crores of rupees the investment comparison is as follows:

	By Private Enterprise	By Government	Total Investment
Second Plan***	3100	3650	6750
Third Plan****	4100	6300	10,400

***Estimated at current prices for each year of the Second Plan.

****At 1960-61 prices.

expect to invest an amount equal to 14 per cent of India's total income in new development programmes as compared to 11 per cent in 1960-61.*

Since the relative proportion of national income coming from foreign aid will be roughly the same as during the Second Plan (over 2 per cent), the Third Plan's higher rate of investment will thus be due to an increase in India's own savings. This is, of course, the essential and promising step in moving towards the so-called "take-off" stage, where the economy can be "self-generating" and more able to go ahead on its own.

Our second view of the size of the Plan is the total of government expenditures proposed. These expenditures include government investment plus "current outlays", that is, investment plus expenses on salaries, outlays for social services, subsidies, etc., which are also basic costs of carrying out development projects and programmes. (Such outlays are difficult to estimate for private enterprise.) A bigger Third Plan means that both investment and the corresponding current outlays are also bigger than in previous years.

These government expenditures are shown in the table on the next page, which also shows the allocations to the key aspects of development.

The total Third Plan government expenditure is, of course, considerably higher than in the Second Plan, $15,750 million (Rs. 7500 crores)** as compared to $9660 million*** (Rs. 4600 crores), although the figures are not strictly comparable. $15,750 million is the present estimate of the financial resources that it is believed can be made available to government without undue inflation and considering the financing needed by private enterprise.

Actual expenditures have to be limited to the $15,750

*In the last year of the Third Plan, 1965-66, investment is expected to be $5460 million (Rs. 2600 crores) as compared with $ 3360 million (Rs. 1600 crores) in the last year of the Second Plan, 1960-61.

**At 1960-61 prices.

***Estimated at current prices for each year of the Second Plan.

THE SIZE AND STRUCTURE OF THE PLAN*

(In millions of dollars at 1960-61 prices)

	Third Plan Investment				Total Expenditure by Government**			
	Public	Private	Total	% of total	Second Plan	% of total	Third Plan	% of total
Development of Agriculture								
Agriculture, Community Development, Minor Irrigation	1386	1680	3066	14	1113	11	2243	14
Major and Medium Irrigation ..	1365	***	1365	6	882	9	1365	9
Development of Industry								
Organized Industry and Minerals ..	3192	2205	5397	25	1890	20	3192	20
Small and Rural Industries ..	315	577	892	4	367	4	554	4
Development of Power and Transport								
Power	2125	105	2230	10	935	10	2125	13
Transport and Communications ..	3121	525	3646	17	2730	28	3121	20
Education, Social Services and Miscellaneous	1306	2258	3564	16	1743	18	2730	17
Inventories	420	1260	1680	8	—	—	420	3
TOTAL	13,230	8610	21,840	100	9660	100	15,750	100

*An identical table giving the structure of the Plan in crores of rupees is given in the appendix of this book.

**Expenditures by government include investment plus what are called "current outlays"—expenditures other than those classified as investment on programmes and projects, such as salaries, subsidies, etc. Current outlays for private enterprise cannot be calculated.

***Included under Agriculture and Community Development.

million now in sight. But in order to reach the high targets set for the Third Plan and make necessary preliminary preparations for the Fourth Plan, it is hoped that programmes totalling $16,800 million (Rs. 8000 crores) can actually be carried out.

The Structure of the Plan

The table just given shows how the investment and expenditures of the Plan will be divided among the different aspects of development. Determining these allocations is one of the most critical tasks in planning and has been carefully studied, so that targets can be reached and that there is, at the same time, a degree of flexibility.

The allocations are made on the basis of the goals and priorities that have been set after review with private industry, the State Governments and in public discussion. They represent the best possible judgement today on what investment and expenditures in each field are necessary to reach the high targets India has set. Estimates of private investment, especially outside of large industry, are as noted necessarily rough. The allocations of government expenditures cited are of course limited to the $15,750 million resources now foreseen but will be raised if finances permit. The targets, the progress in meeting them and resources available are to be reviewed of course periodically, especially at the time of the State and Central annual budgets, so that the Plan can be adjusted when necessary to changing conditions.

The top priority set in the Third Plan is, as we know, to bring about, first and above all, a radical improvement in agricultural productivity, both in production of foodgrains and cash crops.

The Third Plan has allocated $4431 million, roughly 20 per cent of the total expected investment, government and private, to agriculture and irrigation and rural development. A part of this, $1680 million, will be put in by private enterprise. Resources that will be devoted indirectly to increasing

farm production, however, are considerably more. For example, the figures do not include the investment to be made under industry for the production of fertilizers, farm implements, insecticides, by both government and private enterprise, nor the cost of the nation-wide farm extension services already established, the roads and other rural development works planned, or the farm credit that will be made available. Nor do they include the local contributions in cash or labour that may be made by village councils or individual farmers toward farm improvement—such as building wells, etc. In an under-developed economy, this kind of contribution can be fairly plentiful. Taking all these factors together, they will amount to substantial additional resources available to agriculture beyond the specific figures given here. Moreover, if further government resources are needed for assuring a faster step-up in farm production and especially to make fuller use of rural manpower, the government proposes to make more funds available.

The second major priority over the next five years is a very much faster and more intensive development of selected heavy industries to meet immediate needs and also build a base for future growth and greater self-reliance.

The dynamism of the Third Plan, its ability to give the Indian economy a powerful push towards self-reliance, lies, as we have seen, in emphasis on these industries carried on in close relationship with the development of agriculture and India's economy as a whole. Altogether the Third Plan has proposed allocations of about 29 per cent of its total public and private investment for all large-scale industries and mineral development and small industries. Private enterprise alone is putting $2782 million into development of industries; government $3507 million.

To support both industry and agriculture, India must at the same time develop power, transport and communications on an intensive scale to avoid the shortages felt in recent years and prevent new shortages from holding up production

as the economy goes into even higher gear. Power, transport and communications together are expected to absorb 27 per cent of the total investment, public and private, over the Third Plan. Private investment, however, as shown, is expected to be relatively small in these fields—$630 million as compared to $5246 million by government.

Another important set of priorities of the Third Plan are the education, health and other social services, essential for development itself as well as for ensuring a fair balance between economic and social growth, and for providing more equal opportunities to all groups of people.

Many of the social services proposed in the Third Plan are in fact directly linked to development programmes and the prospects of economic growth, such as scientific research, technical education and the training of craftsmen and family planning. There are others which are essential on larger social considerations, such as health and welfare, urban housing and planning. Roughly 16 per cent of total Plan investments, public and private, will go for social services and every effort will be made to step up this amount if resources permit. Private investment in these fields is considerable, $2258 million. Most of this is for housing and construction, while the government resources go largely to education and health.

It will be seen then that the pattern of investment and expenditures continues in general the pattern of the Second Plan. There is greater emphasis, however, on building the industrial base, on power, and on certain aspects of social services. The principal difference in the present allocations, compared with those tentatively proposed a year ago when the Third Plan was still in outline, lies in increased expenditures by the States for agriculture, primary education, industry, power and rural electrification, road development, and family planning—all fields in which it was anticipated that additional resources might be necessary.

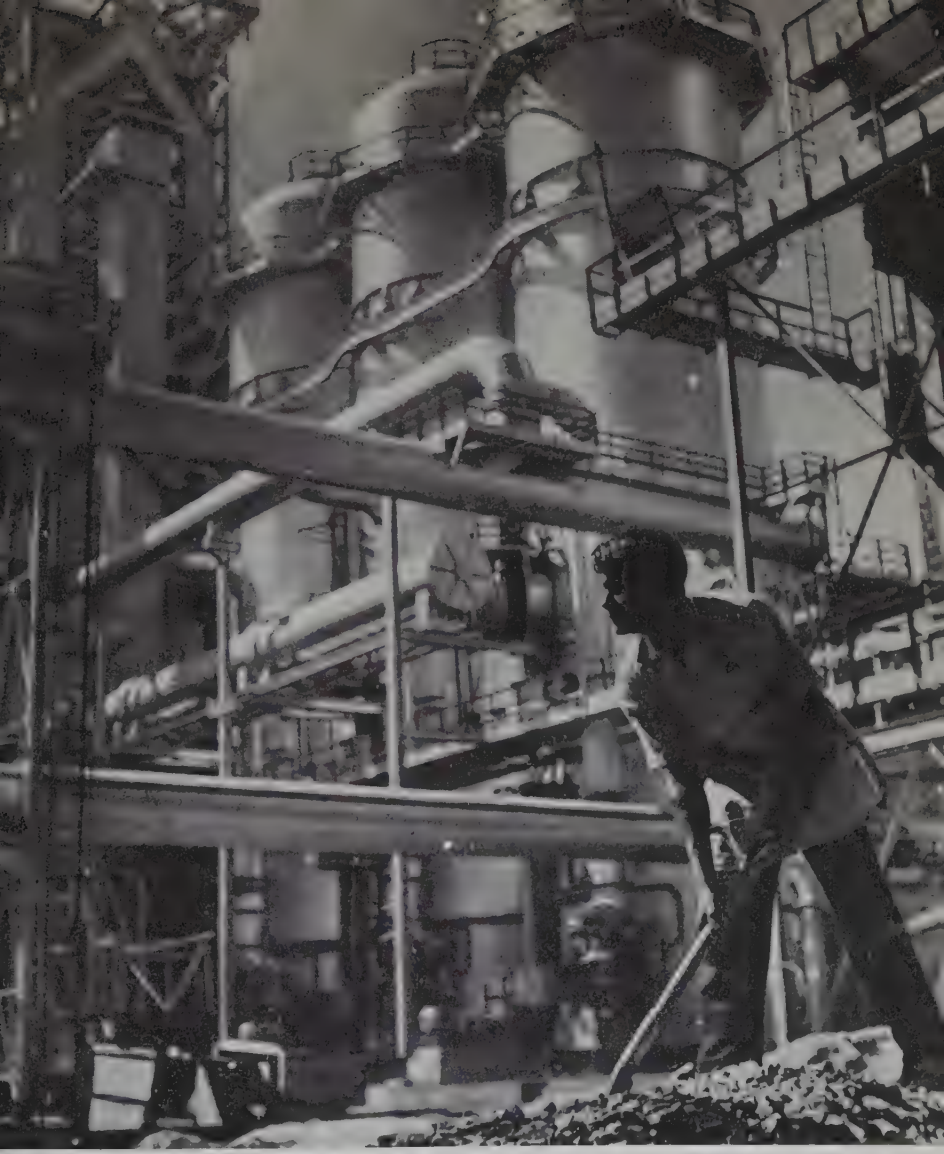
Achieving Balanced Integrated Development

The intensely close *inter-connections* already noted between the various major aspects of its economy have been carefully studied to determine the pattern of the Third Plan, and strike the proper balance among all vital points within the economy. The shortage of domestic and foreign resources makes correct allocation and emphasis especially important. Thus, the requirements of steel, coal, transport, power, for example, were assessed carefully and the Plan attempts to provide for them. Similarly, in drawing up plans for railway development, the likely increase in freight traffic for farm produce and industrial raw materials and finished goods has been taken into account. Manpower needs have been explored and plans made to assure adequate trained personnel.

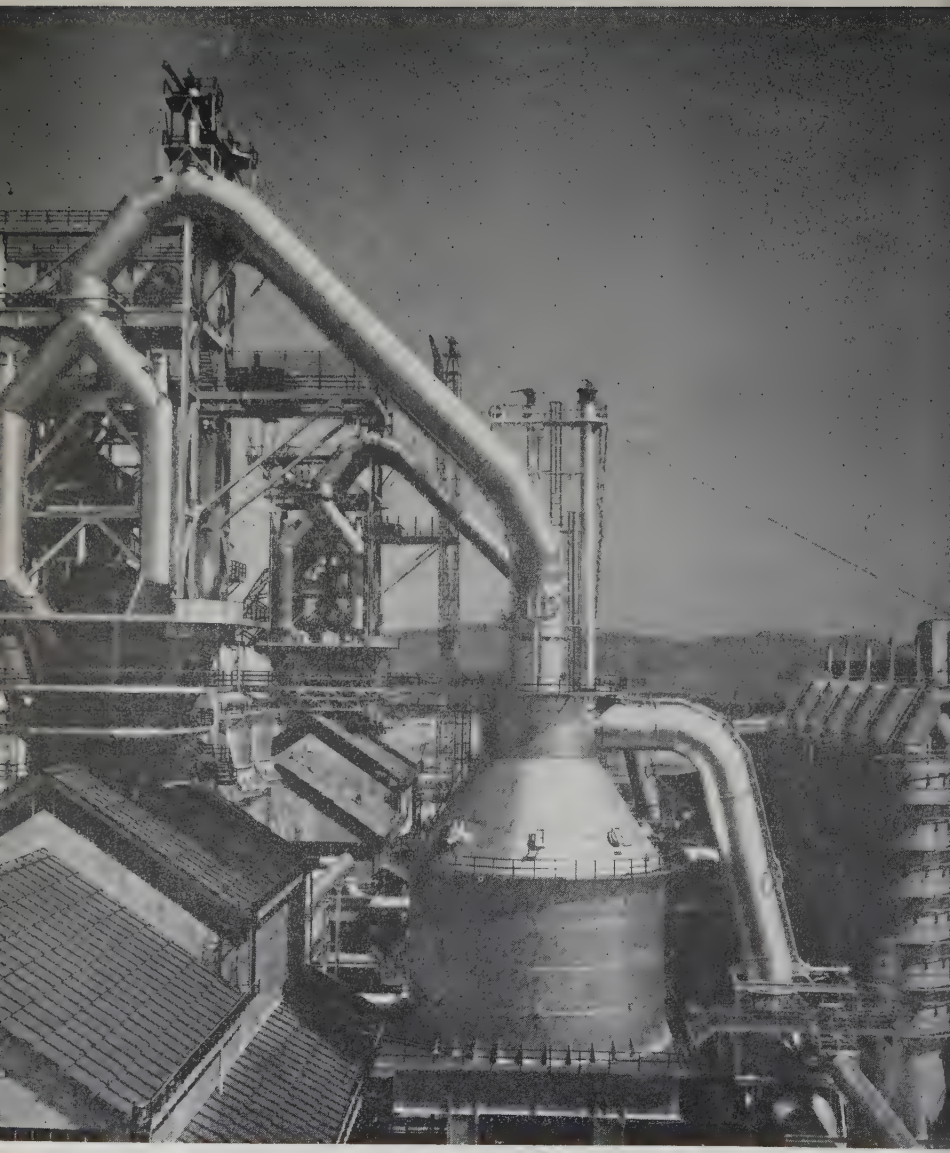
The chief problem in making each of these decisions is that of keeping all parts of the development effort moving ahead rapidly but in unison, supplementing and supporting each other at every point.

We should note here that *over* half the government expenditures proposed ($8190 million out of the total of $15,750 million) are to be spent by the States and Union Territories; the remainder by the Central Government. Under India's federal system of government, many important development programmes—agriculture, community development, health, education and other social services are "State subjects" and the main burden of carrying out these programmes is in State hands. In determining the Plan allocation for each State, the Planning Commission considered each State's needs, problems, past progress, how much each could contribute towards national targets of growth and income, and how much resources each State could muster for its own development programmes. Special care was taken to see that States whose resources are small do not have to limit their development.

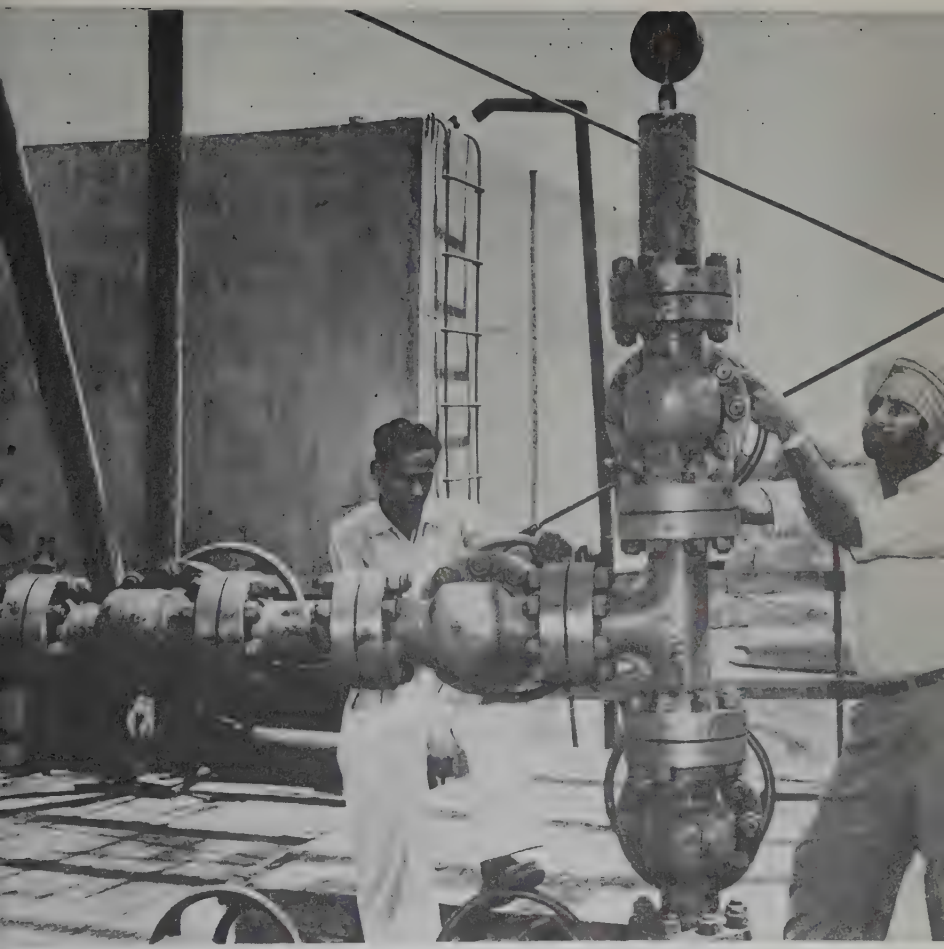
As the Plan proceeds, inevitably, financial allotments



Expansion of the basic industries is among the principal aims of the Plan, for they will determine the pace at which the economy can become self-reliant and self-generating. *Above :* **A worker from the Rourkela steel plant.**



A view of one of the blast furnaces at Rourkela



Large deposits of oil have been discovered in Assam and Gujarat. Three refineries are being established in the public sector. Technicians of the Oil and Natural Gas Commission are here adjusting the Christmas Tree valve at a test well at Kalol in Gujarat.

Side by side with large industries, the Plan also promotes village and small industries. These will lead to fuller use of local resources and labour and help in spreading new skills. *Above :* **A worker in a bicycle factory.**

which are made from year to year to the various development programmes of the State and Central Governments will be influenced by the speed and efficiency with which the projects are carried out. They will also be influenced by the progress made in meeting Plan targets, especially in farm production and in savings and taxation, and by the foreign exchange available. The essential problem is to work out in each field effective means for obtaining the highest returns from the expenditures made, and to start and complete within the shortest possible time programmes which are vital for development and can yield new resources for additional programmes. In every field, the main test is that all development projects—those already started and those to be put into being in the next five years—should yield their fullest benefits as early as possible.

Preparing the Physical Development Programmes

While actual government expenditures have to be limited to the $15,750 million now in sight, the State and Central Governments have drawn up "physical" development programmes on the basis of $16,800 million so that all the plans to raise resources will keep as the target the need for a bigger effort. It should be emphasized that key targets of the Plan, particularly in industry and transport, depend upon programmes drawn up on this larger basis.

The programmes described in brief in the following pages and in detail in the later chapters, and the government appropriations noted for them, are based on a total of $16,800 million of expenditure. In short, India is making plans today to press ahead with the utmost development so that other programmes are "ready to go" and can be taken up if they become economically possible.

Another reason for setting development programmes higher than the resources immediately in sight is to include projects for both the Fourth Plan as well as the Third. All such projects require considerable advance planning.

Although such preparation takes time but in fact relatively little expenditure, the projects must be adequately budgeted for now so that the preliminary steps can be taken.

A full picture of how India can raise resources is given in the next chapter. The States can, it is believed, with additional taxes, finance the full "physical" programmes proposed. Income from existing taxes and other revenues in the States has been increasing in recent years. As the economy grows they can increase even faster and higher taxes can be imposed. The "gap" between the development programmes which it is hoped to start and those for which financial resources are now foreseen applies chiefly to the Central Government's programmes, especially to industry and transport. With the greater effort now planned to raise more resources, it is hoped to reduce, possibly even eliminate, this gap.

Recent studies indicate it may be possible to raise additional resources within the country for such programmes. This will be more especially true if all development programmes move at the speed hoped. The support which the Third Plan has already received from friendly countries and the World Bank and other international agencies for the next two years also indicates that the foreign exchange shortage may not be an initial major block to carrying out development programmes. While some projects which have a relatively long "gestation period" and involve difficult technical problems, may spill over into the Fourth Plan, every possible effort will be made to press those projects which are essential for achieving the key targets of the Plan, and which will "pay off" earliest in additional resources for further development.

Meanwhile, programmes of industry, power and technical education, which are closely linked, must go ahead in a coordinated, connected way, under an approved scheme of priorities based on present resources. If additional resources become available, even more rapid progress will be assured.

In other fields, the possibility of carrying out development programmes beyond the limit set by the resources now in sight will depend on India's ability to raise further taxes and revenues and the amount of local funds and contributions in cash or labour forthcoming. In some fields, such as agriculture, small industries and social services, considerable local funds and contributions may be expected. Visualizing larger development programmes in these fields today will give a margin of further development to be taken up if such resources are forthcoming.

Development Programmes and Targets

We have already named the key targets of the Plan—in agriculture, industry, income and employment. The development programmes designed to reach these, and the many other important targets of the Plan are described very briefly here. Later pages discuss each programme more fully. But even in this brief summary what is readily seen is the range of effort, the nation-wide mobilizing of resources and manpower, the economic and social changes necessary to achieve India's goals.

What India Will Do in Agriculture

The Third Plan intends to step up farm production as a whole by 30 per cent*—a rise nearly twice as fast as in the past ten years. To achieve such a sizable rise, the Third Plan is mounting a strong attack on six main fronts.

First, since irrigation is crucial to increasing total yields, India will put 20 million more acres under irrigation, bringing the (net) total to 90 million acres, nearly half of India's irrigable area. Second, on land which cannot be irrigated, India will stress soil conservation work on 11 million acres and dry farming techniques on about 22 million acres. Third, it will vigorously step up the use of fertilizers—a five-fold

*In terms of the index of agricultural production for all crops. The index for 1960-61 is 135; by 1966 it will go up to 176 (1949-50=100).

increase in the case of nitrogenous* fertilizers (from 230,000 tons to one million tons) and a six-fold increase in phosphatic** fertilizers (from 70,000 tons to 400,000 tons). It also hopes to get 41 million acres covered by green manures.

Fourth, a new nation-wide and intensive drive will be made to introduce improved ploughs and farm implements and stimulate their manufacture by both government and private enterprise. Fifth, the farm extension and rural community development programme will be extended to all of rural India by October, 1963, and thus be able to reach India's 360 million farm people with knowledge of new farming techniques. In more and more States responsibility for development will be placed in the hands of the people themselves through popularly elected local bodies. Rural cooperatives are to be expanded to cover about two-thirds of all farm families, providing them with farm credit and supplies, and local storage and marketing facilities.

Finally, selected districts which have particularly favourable conditions for stepping up farm production such as irrigation or assured rainfall are being put under an "intensive agricultural district programme". To begin with, one such district has been selected in every State. This significant new programme will bring to these areas a concentration of technical help, fertilizers, improved seeds, credit and other supplies to reach all farmers and get immediate rapid gains in production out of a total community effort.

When the targets (*see* p. 93) are reached by 1966, India will be self-sufficient in foodgrains, even with the larger population expected. By this it is meant that India will be able to provide about 17.5 oz of foodgrains per person per day compared to 16 oz today, besides providing some margin against emergencies. The target for raw cotton is expected to provide 17.2 yards of cloth per year per person, as compared to 15.5 yards today, and in addition allow for exports.

*In terms of nitrogen.

**In terms of P_2O_5.

The production of important farm products is planned to go up as follows :

THIRD PLAN TARGETS FOR FARM PRODUCTION

	Production 1960-61 (provisional)	Third Plan target (1965-66)	% increase
Foodgrains (million tons)	76*	100	32
Oilseeds (million tons)	7·1	9·8	38
Sugarcane** (million tons)	8	10	25
Cotton (million bales)	5·1	7	37
Jute (million bales)	4	6·2***	55

To provide more balanced diets and at reasonable prices, India intends at the same time to give more attention to stimulating production of such foods as fruits and vegetables, milk, fish, meat and eggs and cooking oils. Large programmes for improving fisheries, dairying and livestock, for setting up milk supply system for the cities as well as creameries and milk product factories will be part of this effort. Production of other cash crops important for export—coconut, arecanut, cashewnut, pepper, cardamom, tobacco, and lac—will be stepped up by special measures.

THE DEVELOPMENT PROPOSED FOR INDUSTRY

Industry, the next top priority of the Plan, will get a powerful push forward. The strongest emphasis will be on those industries which build for the future and can help make the economy more self-reliant and self-sustaining, namely, steel and machine-building and the manufacture of producer goods. It is these industries which will help reduce the need for foreign aid, and make possible manufacture of other basic goods India needs as well as a wider variety of exports.

*More recent estimates indicate that the 1960-61 yield may be over 79 million tons.

**In terms of raw sugar, or *gur*.

***Excludes mesta which may provide 1·3 million bales in 1965-66.

Both private enterprise and government, as we have seen, propose very substantial investments in industry and minerals—$2205 million from private enterprise, $3192 million from government. While the lead in developing new capacity in basic and heavy industries, principally iron and steel, machine tools, fertilizers, basic chemicals and intermediates, essential drugs, will be taken by the Indian Government, private enterprise will play a critical role in the manufacture of machinery for textile mills and sugar, paper and cement mills, of trucks and other vehicles, in coal mining, in the production of fertilizers and other important industrial chemicals, in bulk processing of drugs, and in essential consumer goods.

With the very large private and public investment to be put in, plus a concentrated effort to improve technical training, managerial skills and know-how, industrial production by 1966 is expected to go up by about 70 per cent over present levels. More significant than the rise in production as a whole will be the increased output of iron and steel, machinery and chemicals. These basic materials, as noted earlier, have already shown tremendous growth and are of key importance to India's future.

PROGRESS IN INDUSTRIAL PRODUCTION

(Index : 1950-51=100)

	1960-61	1965-66	% increase
General index	194	329	70
Iron and steel	238	637	168
Machinery	503	1224	143
Chemicals	288	720	150
Cotton textiles	133	157	18

The gains over the Third Plan alone will be sizable. Compared to the very low levels of 1950-51, they will show notable rises in important new directions for a developing country. In relation to advanced nations, or even to India's needs, the production will still of course be relatively small.*

*For example, by 1965-66, even with the very marked expansion that will have taken place, India will be producing a little over 9 million tons of crude steel as compared with over 16 million tons in Japan and about 15 million tons in France in 1959.

A key Third Plan programme is the development of iron and steel. The target is a capacity of 10.2 million tons in terms of steel ingots and 1.5 million tons of pig iron. This compares with today's capacity of 6 million tons for steel ingots (half this capacity is in government-owned and half in private plants), and for pig iron of 900,000 tons. India's privately owned steel plants have been already expanded and the additional output expected over the Third Plan will come almost entirely from government-owned plants. Capacity of the three government-owned plants—Bhilai, Rourkela and Durgapur—started during the Second Plan will be doubled, to 5.9 million tons. Even this will not provide enough steel for this fast developing economy. A fourth steel plant with an initial capacity of one million tons is to be started by the government. Production of alloy, tool and special steels—a new and critical field for India—is being given a high priority, and a new plant is being set up to produce 200,000 tons. Private enterprise is expected to produce about 200,000 tons of pig iron from low-shaft furnaces, as well as 3 million tons of steel ingots in the private plants already established and expanded.

The most significant growth over the Third Plan will be in machinery and engineering industries, since purchase of heavy machinery today is one of the principal drains on foreign exchange. Machinery also is one of India's most promising exports to finance future growth. Building on the good start in machine production already made, the Third Plan proposes sizable expansion and will enter into many new fields.

Private enterprise is expected to play a considerable part in machinery and machine tools. In certain lines, such as textile mill, sugar, cement and paper mill machinery, India hopes to develop enough private capacity to cut down imports substantially and in some categories even reach self-sufficiency.

Government-sponsored plants to be set up include : a

heavy machine-building plant to supply most of the needs of the steel mills; a foundry/forge; a coal-mining machinery plant; a heavy structural plant; a heavy plate and vessel works; a heavy machine tool factory; and three heavy electrical projects for the production of a wide range of power generation equipment for India's power plants.

Development of India's heavy chemical industry is another of the outstanding new fields to be expanded over the Third Plan. Fertilizer production, vitally necessary to increase crop yields, is to be stepped up from about 110,000 tons (in terms of nitrogen) to an estimated production of 800,000 tons or over seven-fold. A substantial increase in the production of phosphatic fertilizers is also proposed. Fertilizer production by private enterprise and private foreign collaboration is being vigorously encouraged, as well as in government-owned plants. Organic chemicals, dyestuffs, plastics, synthetic drugs, antibiotics, sulphuric acid and caustic soda are among other significant products expected in far larger quantities in the Third Plan from India's expanding chemical industry.

To feed a rapidly developing industry and an expanding transport system, the Third Plan has set a high coal production target—97 million tons compared to the target of 60 million tons set for the end of the Second Plan. Nearly half of this increase will be met from privately owned mines. Exploration and development of other mineral resources—copper, bauxite, uranium, gypsum and oil—have a high priority. Foreign firms are being invited to join the exploration for oil and most of the promising sedimentary areas in India will be explored. The government will be entering petroleum refining for the first time in 1962, and by the end of the Plan will have a share in nearly half the refining capacity of the country.

Essential consumer goods needed by the rising population will be produced by private enterprise, large and small. Those of special importance are bicycles, cloth, sugar, cooking oils, sewing machines.

Briefly summarized, the important Third Plan industrial targets proposed for both producer and consumer goods include :

SELECTED THIRD PLAN INDUSTRIAL TARGETS
(Annual production, in large-scale industry only)

	1960-61	1965-66
Steel ingots (million tons)	3·5	9·2
Aluminium ('000 tons)	18·5	80
Coal (million tons)	54·6	97
Iron ore (million tons)	10·7	30
Diesel engines ('000s)	40	66
Machine tools—graded (value in millions of $) ..	11·6	63
Ball and roller bearings (millions)	2·9	14
Paper and paper board ('000 tons)	350	700
Sulphuric acid ('000 tons)	363	1500
Caustic soda ('000 tons)	100	340
Cement (million tons)	8.5	13
Sugar (million tons)*	3	3·5
Cotton textiles (million yards)**	5127	5800
Bicycles ('000s)	1050	2000
Sewing machines ('000s)	297	700
Automobiles ('000s)	53·5	100

Small-scale industries which have grown rapidly over the past five years are to be stimulated to step up even further their production of consumer and simple producer goods, and to create more employment for the growing labour force. Private enterprise which has already shown outstanding vigour in this field is investing an estimated $577 million (Rs. 275 crores) in these industries. The government is putting in $554 million (Rs. 264 crores) chiefly to provide special kinds of assistance like facilities for training, technical know-how, provision of credit, supply of raw materials. More "industrial estates" will be provided where small manufacturers can set up business with power and transport and other facilities ready at hand. Small industry will be encouraged to go into rural areas and the traditional village industries encouraged to use improved techniques.

*For crop year, November-October.

**Mill-made.

Power

Since demand for power is going up very rapidly, power has one of the highest priorities in the Third Plan. Total power generating capacity will be increased from the present 5.7 million kW to 12.7 million kW at the end of the Third Plan, in new plants as well as those now under completion. Power production will be well more than doubled, from 19.8 to 45 billion kWh. Even with this considerable jump in production, there may be local power shortages from time to time. During the Third Plan, India will launch its first nuclear power station, of 300,000 kW capacity; but most of the new power stations will be thermal and hydel plants. As we have seen, India is producing more and more of its own power equipment but nevertheless substantial imports will be needed.

About 20,000 more towns and villages will be electrified during the Third Plan period, bringing the total to about 43,000. Almost all towns with a population of over 5000, and about half of those between 2000—5000 population will be electrified. Private investment in power is expected to be relatively small—$105 million compared to $2125 million from government.

Transport and Communications

Transport shortages of these past few years have accented sharply the key role of transport in a developing country. Over the next five years freight traffic moving by rail and road will become increasingly heavy, a very large part of it "developmental" traffic—steel, cement, iron ore, coal. One of the largest single development programmes of the Third Plan is expansion of transport. The government is to invest $3121 million in transport and communications and private enterprise $525 million.

India's railways will be expanded to carry about 245 million tons of freight by 1965-66—about 59 per cent more than today. This will call for considerable investment in

new rolling stock, and in laying of new railway lines and doubling of track. India can now produce much of its own rolling stock, rails and other equipment; a considerable amount must still be bought abroad. Even with the sizable expansion planned, the railroads will continue to operate under strain throughout the Third Plan period.

Freight moving by road is expected to more than double in the next five years. To facilitate road transport, 25,000 more miles of surfaced roads will be laid, and the existing road system expanded and upgraded. Road transport services are expected to grow as rapidly as more commercial vehicles become available. The present estimate of production is 155,000 more vehicles, which will bring a total of 365,000 on the roads. Most of the private investment in transport will be in road transport services for freight and passengers, as well as production of vehicles. India's ports, waterways and airlines will be expanded and improved. Post and telegraph offices, telephone facilities, broadcasting facilities will be increased to meet the rising tempo of needs for better and faster communications.

Education and other Social Services

Essential for development itself, and for keeping social progress and opportunities in pace with economic growth, is the expansion of social services. Education and especially technical education is, as we have seen, one of the keys to India's progress now and over the future. Public pressures are constantly rising for more funds and schooling facilities as well as for more trained manpower. The Third Plan will meet these demands to the limit of its resources.

An outstanding programme of the entire Third Plan is to introduce for the first time in India's history free compulsory education for all children 6–11 years old. 100 per cent attendance will not be possible because education for girls is still, in spite of remarkable social changes in the last ten years, considerably behind that of boys. But by 1966 over

three-fourths of all the children in the age group of 6–11 years are expected to be in school. Middle and high schools, although for the most part not free nor publicly owned, will be helped to expand by government grants. Altogether, through high school, India will have 64 million children in school by 1966—about 20 million more than today. Nearly half a million more will be in colleges and higher technical institutions or about 1.5 million altogether. Over 70 new colleges must be opened each year of the Plan to meet the demands for higher education. To expand education so rapidly, over 550,000 more teachers are needed for the schools, 27,000 more for the colleges. Teacher-training therefore has one of the top priorities in the Plan. So too does the teaching of science at all levels to prepare more students to take part in a technically developing society.

One of the most challenging jobs in the Third Plan is to increase the number of trained men and women India needs—engineers, doctors, nurses, science teachers, skilled statisticians, competent managers and administrators. Over the Third Plan alone, India needs more engineers than it has today (over the Fourth Plan, it will need more); it will need over a million more skilled workers and 59,000 more men and women in the rural extension services. To meet these and other manpower needs now and over the future, technical institutions for training in engineering, medicine, agriculture, crafts, for social work, and business and public administration, are being expanded as fast as possible. For example, engineering colleges and polytechnics will be able by 1966 to take in about 57,000 students a year as compared to some 40,000 today.

In the field of health, the Third Plan will launch nation-wide efforts to assure safe drinking water in city and village, to provide public health services, to prevent communicable diseases and to promote family planning. A malaria eradication programme is already underway to wipe out malaria entirely. Nation-wide control campaigns are being started

on tuberculosis and smallpox, and cholera will be checked in endemic areas. A particular effort will be made to get safe drinking water in villages, especially in areas where as yet little rural development work has been done. The important rural health service already started will be considerably enlarged, to put one rural health centre-cum-hospital in every rural development block, some 5000 in all, although this still means only one health centre for about every 70,000 rural people.

Because of the sharp increase in population, family planning has a very high priority. Nine times as much funds as in the Second Plan, up to as much as $57 million (Rs. 27 crores), are being proposed for it. The programme will include a widespread educational campaign, training and research, and stepped-up production and distribution of contraceptives. The number of family planning clinics will be increased from 1650 to 8200.

To deal with the serious housing and living conditions of the cities, urban planning will have new and strong emphasis. Calcutta, which has particularly urgent needs as the largest and most congested city in an industrial region, will be among the most important of the 40 or more cities to be dealt with. The promising rural housing programme already started will be tied into the community development programme and the setting up of local building materials industries.

While new housing will be built mostly by private home builders or agencies (as we have seen private enterprise is expected to invest over $2200 million in construction; most of this will be for housing), the government will carry on its programmes for low-income group housing, housing for industrial workers, slum improvement and rural housing. It will also move to acquire and develop land for housing especially in urban areas and to provide finance for low and middle income housing through housing finance agencies.

Among social welfare activities, child welfare will have

the highest priority. An effort will be made to stimulate and coordinate welfare services for normal as well as handicapped children, to deal with juvenile delinquency and particularly child beggary. Special attention will be paid to development programmes for backward groups and tribal people. Getting cooperation of voluntary agencies, particularly for social welfare work and family planning, and even for actual construction work, will be an important aspect of the Plan.

Employment

As we have seen, because of the growth in population, 17 million more people will come of age to seek and need work. The development programmes of the Plan described above, if carried out in full, are expected to provide employment for 14 million people. To create further employment and also assure that essential construction and farm and land improvement work is done, India will initiate its first rural works programme, handled predominantly through small local projects in the villages. By 1966 about 2½ million people will be working in these programmes.

These then are the high targets of the Third Plan and the programmes designed to achieve them. As they have been reviewed and discussed over the past year and more, it is clear beyond doubt that the targets are certainly modest ones to meet the sharply rising expectations of the people and the demands of the economy. It is also clear that to reach these targets will take the utmost efforts, the most efficient management, the maximum returns in the shortest possible time from each development programme, the closest coordination of all programmes so that each supports and paces all others in constant upward spiral of growth. It will also take, as we have seen, a considerable measure of sacrifice and austerity, a restriction on non-essential production and imports, a restraint on living standards, a step-up in savings and taxation.

The hope that India can meet its pressing needs today and

tomorrow, that it can get farther down the road to self-reliance lies indeed in achieving the targets to the full.

But even if India achieves all its targets, it will still have a long way to go to be a developed country. The Third Plan is only a step in a new intensive phase of a decade or more of growth. But it is a crucial step. With its success the day will have come at least a little closer to realization when India can finally conquer poverty and bring all its people the opportunity for a better life.

PROGRESS IN PRODUCTION AND DEVELOPMENT, 1950-51—1965-66

		1950-51	1955-56	1960-61 (estimated)	1965-66 (targets)	% increase in 1960-61 over 1950-51	% increase in 1965-66 over 1960-61
I. AGRICULTURE AND RURAL DEVELOPMENT							
1. Agricultural Production							
foodgrains	million tons	52·2(*a*)	65·8(*a*)	76	100	46	32
cotton	million bales	2·9	4	5·1	7	76	37
sugarcane (gur)	million tons	5·6	6	8	10	43	25
oilseeds	million tons	5·1	5·6	7·1	9·8	39	38
jute	million bales	3·3	4·2	4	6·2(*b*)	21	55
tea	million lb	613	678	725	900	18	24
tobacco	'000 tons	257	298	300	325	17	8
fish	million tons	0·7	1	1·4	1·8	100	29
milk	million tons	17·1	19·3	22	25·3	29	15
wool	million lb	60	65	72	90	20	25
2. Agricultural Services							
area irrigated (net total)	million acres	51·5	56·2	70	90	36	29
land reclamation (additional area) (*c*)	million acres	—	2·7	1·2	3·6	—	200
soil conservation (additional area benefited) (*c*)	million acres	—	0·7	2	11	—	450
fertilizers used :							
nitrogenous	in '000 tons of N	55	105	230	1000	318	335
phosphatic	in '000 tons of P_2O_5	7	13	70	400	900	471
seed farms	number	—	—	4000	4800	—	20
3. Community Development							
development blocks	number	—	1069	3110	5223	—	68
villages covered	thousands	—	106	368	550	—	49
population served	millions	—	69	204	359	—	76

4. Cooperation							
rural credit societies	thousands	105	160	210	230	100	10
short and medium term loans advanced	in millions of $	48·09	104·16	420	1113	773	165

II. INDUSTRIAL DEVELOPMENT

1. Large-Scale Industries

1. Metallurgical							
finished steel	million tons	1	1·3	2·2	6·8	120	209
pig iron for sale	million tons	0·35	0·38	0·9	1·5	157	67
alloy, tool and special steels (finished)	'000 tons	—	—	—	200	—	—
aluminium	'000 tons	3·7	7·3	18·5	80	400	332
copper (fire refined and electrolytic)	'000 tons	6·6	7·5	8·9	20	35	125
2. Mechanical and Electrical Engineering							
cement machinery	value in millions of $	—	0·71(*d*)	1·26	9·45	—	650
sugar machinery	value in millions of $	—	0·4	6·93	21	—	203
industrial boilers	value in millions of $	—	—	0·82	52·5	—	6150
machine tools (graded) ..	value in millions of $	0·71	1·64	11·55	63	1527	445
ball and roller bearings ..	millions	0·1	0·9	2·9	14(*e*)	2800	383
diesel engines (stationary) ..	thousands	5·5	10	40	66	627	65
tractors	number	—	—	2000	10,000	—	400
electric motors (200 h.p. and below)	'000 h.p.	100	272	700	2500(*f*)	600	257

(*a*) Estimates of production adjusted for changes in statistical coverage and methods of estimation up to 1956-57.
(*b*) Excludes mesta which may provide an additional 1·3 million bales in the Third Plan.
(*c*) Relates to five-year period.
(*d*) Relates to calendar year.
(*e*) By working the capacity on three shifts.
(*f*) 300 h.p. and below.

PROGRESS IN PRODUCTION AND DEVELOPMENT, 1950-51—1965-66—*contd.*

		1950-51	1955-56	1960-61 (estimated)	1965-66 (targets)	% increase in 1960-61 over 1950-51	% increase in 1965-66 over 1960-61
2. Mechanical and Electrical Engineering—*contd.*							
electric transformers (33 kv and below)	'000 kva	179	625	1200	3500	570	192
electric cables (ACSR) conductors	'000 tons	1·7	8·7	22	44	1194	100
3. Railway Locomotives							
steam	number	7	179	295	1175(*a*)	4114	—
diesel	number	—	—	—	434(*a*)	—	—
electric	number	—	—	—	232(*a*)	—	—
4. Rubber Manufactures							
automobile tyres	millions	—	0·9	1·35	3	—	122
bicycle tyres	millions	—	5·8	11	31	—	182
5. Chemicals							
fertilizers produced :							
nitrogenous	in '000 tons of N	9	79	110	800	1122	627
phosphatic	in '000 tons of P_2O_5	9	12	55	400	511	627
sulphuric acid	'000 tons	99	164	363	1500	267	313
soda ash	'000 tons	45	81	145	450	222	210
caustic soda	'000 tons	11	35	100	340	809	240
sulpha drugs	tons	—	83(*b*)	150	1000	—	567
D.D.T.	tons	—	284	2800	2800	—	—
dyestuffs	million lb	—	4	11·5	18	—	57
6. Other Industries							
sewing machines	thousands	33	111	297	700	800	136
bicycles	thousands	101	513	1050	2000	940	90

motor cycles and scooters ..	thousands	—	1·5	18	50	—	178
automobiles	thousands	16·5	25·3	53·5	100	224	67
ship-building	'000 GRT	—	50(*a*)	20	50—60	—	150—200
cotton textiles (mill-made) ..	million yd	3720	5102	5127	5800	38	13
rayon filament	million lb	0·4	16	47	140	11,650	198
sugar (*c*)	million tons	1·12	1·86	3	3·5	168	17
steel structural fabrications ..	'000 tons	—	90	150	1000	—	567
cement	million tons	2·7	4·6	8·5	13	215	53
petroleum products	million tons	—	3·6	5·7	9·9	—	74
paper and paper board ..	'000 tons	114	187	350	700	207	100
plastics	'000 tons	—	0·7	10	74	—	640
glass and glassware	'000 tons	92	125	225	440	145	96
industrial gases—oxygen ..	million cft	—	—	700	1650	—	136

2. Village and Small-Scale Industries

hand-spun hand-woven fabrics	million yd	7·3	28·9	74		914	
handloom fabrics	million yd	742	1471	1900	3500	156	49
powerloom fabrics	million yd	148(*b*)	273(*b*)	375		153	
raw silk	million lb	2·5(*d*)	3·2(*b*)	3·6(*b*)	5	44	43

3. Minerals

iron ore	million tons	3·2	4·3	10·7	30	234	180
coal	million tons	32·3	38·4	54·6	97	69	76

(*a*) Relates to five-year period.

(*b*) Relates to calendar years.

(*c*) Relates to crop year—November to October.

(*d*) Calendar year 1961

PROGRESS IN PRODUCTION AND DEVELOPMENT, 1950-51—1965-66—*contd.*

		1950-51	1955-56	1960-61 (estimated)	1965-66 (targets)	% increase in 1960-61 over 1950-51	% increase in 1965-66 over 1960-61
III. POWER, TRANSPORT AND COMMUNICATIONS							
1. Power							
electricity (installed capacity) ..	million kW	2·3(*a*)	3·4(*a*)	5·7	12·7	148	123
electricity generated	million kWh	6575(*a*)	10,777(*a*)	19,850	45,000	202	127
towns and villages electrified ..	thousands	3·7	7·4	23	43	523	87
2. Transport and Communications							
1. Transport Services							
railways: freight carried ..	million tons	91·5	114	154	245	68	59
roads: surfaced including national highways	'000 miles	97·5	122	144	169	48	17
road transport: commercial vehicles on road	thousands	116	166	210	365	81	74
shipping	million GRT	0·4	0·5	0·9	1·1	125	22
major ports: handling capacity	million tons	20	25	37	49	85	32
2. Communications							
post offices	thousands	36	55	77	94	114	22
telegraph offices	thousands	3·6	5·1	6·5	8·5	81	31
telephones	thousands	168	280	460	660	174	43

IV. SOCIAL SERVICES

1. EDUCATION

1. General Education							
students in schools	millions	23·5	31·3	43·5	63·9	85	47
2. School-going Children as Percentage of Children in Respective Age Groups							
primary stage	6—11 years	42·6	52·9	61·1	76·4	79(*b*)	45(*b*)
middle stage	11—14 years	12·7	16·5	22·8	28·6	102(*b*)	55(*b*)
high/higher secondary stage ..	14—17 years	5·3	7·8	11·5	15·6	139(*b*)	57(*b*)
3. Number of Schools							
primary junior basic schools ..	thousands	209·7	278·1	342	415	63	21
middle/senior basic schools ..	thousands	13·6	21·7	39·6	57·7	191	46
high/higher secondary schools	thousands	7·3	10·8	16·6	21·8	128	31
multipurpose schools	thousands	—	0·3	2·1	2·4	—	14
4. Technical Education							
engineering and technology:							
degree level	admissions	4120	5890	13,858	19,137	246	38
diploma level	admissions	5900	10,480	25,570	37,390	333	46
agriculture colleges	admissions	1060(*c*)	1989	4600	6200	334	35
veterinary colleges	admissions	434(*c*)	1269	1300	1460	200	12

2. HEALTH

1. Number of Institutions							
hospitals and dispensaries ..	thousands	8·6	10	12·6	14·6	47	16
hospital beds	thousands	113	125	186	240	65	29
primary health units	number	—	725	2800	5000	—	79
family planning centres ..	number	—	147	1649	8200	—	397

(*a*) Relates to calendar years.
(*b*) Worked out from enrolment figures.
(*c*) Relates to 1951-52.

PROGRESS IN PRODUCTION AND DEVELOPMENT, 1950-51—1965-66—*concld.*

		1950-51	1955-56	1960-61 (estimated)	1965-66 (targets)	% increase in 1960-61 over 1950-51	% increase in 1965-66 over 1960-61
2. Personnel							
medical colleges (intake) ..	number	2500	3500	5800	8000	132	38
doctors	'000 in practice	56	65	70	81	25	16
nurses	'000 in practice	15	18·5	27	45	80	67
auxiliary nurse-midwives and midwives	'000 in practice	8	12·8	19·9	48·5	149	144
nurse-dais and dais	'000 in practice	1·8	6·4	11·5	40	539	248
health assistants and sanitary inspectors	thousands	3·5	4	6	19·2	71	220

CHAPTER VI

FINANCING THE PLAN

To pay for a $21,840 million Plan will take a supreme effort by the Indian people, by Indian enterprise and by the Indian Government. It will also require substantial assistance from friendly countries. Yet an investment of $21,840 million over five years, for a nation of 438 million people with such important needs, is indeed small. For example, the United States Government in a single year, 1960, has spent nearly five times as much on investment and consumption, and U.S. private investment alone in that one year has been over three times as much.

But this is a large amount for India, only now arising from poverty. It will mean that investment per person in India will average about $9 per year—out of an average income per person of not much over $76 a year during the Plan period. Raising real resources to achieve the Plan targets, while necessary and possible, is thus by no means easy.

India is prepared to make the utmost effort to raise its own rupee resources for the Plan. As a democracy, India must do this, as we have seen, not by forcing down the already low living standards, but at every step with popular consent and support of its people and a due concern for their welfare.

Raising funds for the Plan must of course involve a sizable increase in taxes or savings. But it must also involve a constant and fast rise in production so that at the same time India's low living standards can be raised somewhat and savings increased without undue hardships or inflation. In short, India must *create* the surplus resources it needs throughout the Plan as well as make sure, through tax and other measures, that it draws them off to invest in development, with all income groups bearing a fair share of the burden.

To help obtain the foreign exchange required to buy abroad the machinery, equipment and supplies needed for development, Indian exports are to be stepped up substantially. But even if these imports are held down to absolute essentials, India's foreign exchange earnings cannot pay for them all. India must therefore seek considerable foreign aid and foreign private investment to help build an economy that can be progressively more self-reliant in the future.

The Overall Financial View

In looking at the prospects for raising the necessary resources for the Plan, the situation is now in several ways considerably better than in the past, and in some ways more strained.

The $21,840 million to be invested in the Third Plan is, as noted earlier, about half again as much as was invested over the Second Plan—a very sizable increase. It would have been impossible ten years ago, even five years ago, to consider a plan of this size. Today the nation is better prepared for a larger development effort. In short, resources grow as the economy grows. With the key investment and general growth in national income that has taken place over the past decade, India is far better able today to produce more resources and will continue to be so, if production goes up as proposed.

The prospects for earning more foreign exchange have also improved. India's industries have become more diversified and able to produce more goods for export, in addition to its traditional exports of tea, jute, cotton textiles and the like.

The prospects of adequate foreign aid have likewise brightened. Over a year ago, at the time the Draft Outline of the Plan was prepared, there was concern whether the necessary foreign assistance would be available soon enough or come in a form adapted to support the particular project and maintenance needs of the Plan. Over the past year, the

interest expressed by friendly governments, the World Bank and other international lending agencies in assisting India at this period of intensive growth has made it easier to plan ahead. It now appears that India will have suitable aid to start many of its programmes over the first two years of the Plan although negotiations are not yet complete. The substantial loan of food and other agricultural commodities made a year ago under U.S. P.L. 480 has also helped to give assurance that, together with India's own rising farm production, there should not be price rises or shortages in these basic essentials of life.

India has moreover considerably more experience today in planning for and living with an economy where resources, especially foreign exchange, are short. The early years of the Second Plan saw acute foreign exchange shortages and price rises. It was necessary to cut down the size of the Plan itself, make sharp cuts in imports, impose higher taxes, reduce deficit financing and draw more heavily than expected on foreign exchange reserves and aid. This experience, difficult as it has been, has proved a valuable one in highlighting the problems of financing and managing development in a fast-growing economy. In the Third Plan, the problem of price pressures and means of offsetting them through higher production and heavier taxes are more clearly foreseen. More exact estimates of foreign exchange needs have been made, imports are cut down to the bone and both private enterprise and government have become familiar with the techniques of import and licensing controls. In other words, the economy and the administration have adjusted to shortages and today are more prepared to meet the strains and stresses of rapid development.

Yet, India must face the fact realistically that the economy will continue to operate under strain throughout the Plan period. There will be little "fat" or leeway to spare, even with production pushed to the utmost, and with generous foreign aid. Development will press hard upon

resources—as it must if the nation is to raise the present low living standards and prepare itself for the future. The increase in population also imposes a greater strain. There will continue to be pressures on prices. There will continue to be severe shortages of basic raw materials and capital goods. India no longer has a cushion of foreign exchange reserves to permit imports beyond those strictly needed for the Plan; even for essential imports, dependence on foreign aid is direct and sizable.

In short development will not be painless. It will demand from all, and most from those who can afford it best, heavier tax burdens, austerity, and sacrifices far more fairly shared.

Towards Self-Reliance

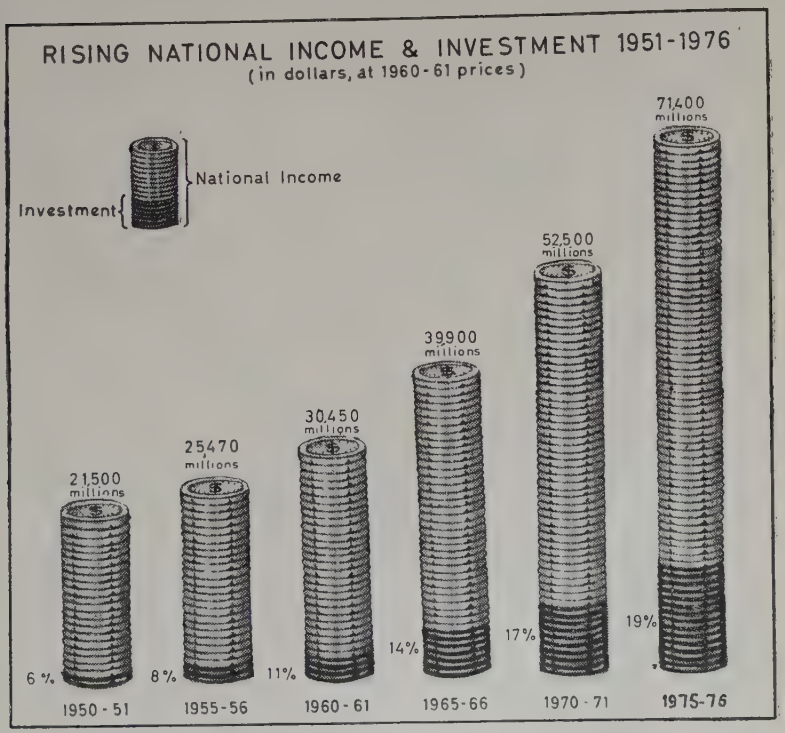
With the utmost effort to raise its own resources and the help of friendly countries, India expects over the Third Plan to be able to increase its rate of investment in development very markedly.

The Third Plan investment of $21,840 million will mean a stepping up of the rate of investment from the present level of about 11 per cent of national income to over 14 per cent. This is a sizable jump. To bring it about, India hopes to raise the rate of its own savings, as we have seen, from the current level of over 8 per cent of national income to over 11 per cent by the end of the Third Plan. Foreign investment and assistance over the Third Plan, as over the Second Plan, is expected to continue at over 2 per cent of India's national income, thus making possible a total rate of investment of over 14 per cent in development.

Here we need for a moment to look ahead to the problem of financing India's growth not only over the Third Plan, but over the next decade or so of intensive development. Over the future, investment in development must take a larger and larger part of India's national income, as much as 20 per cent by 1976, with a progressive cutting down of the

proportion contributed by foreign aid. This is the essence of the self-reliance towards which India is striving. It means that India will have to "save" a larger and larger part of its own income for development, with the Indian people and all parts of the economy sharing a heavier burden.

To reach any such levels of investment over the Third Plan or future years, production must constantly go up to create constantly larger resources for investment. But rising production alone will not mean a rising *proportion* of India's own income invested in development. As we have seen, India has so far been ploughing back only a relatively small share of its income into growth. Today in all advanced nations and many of the developing nations, the proportion is considerably higher than in India.



India can and must do better. This is the crucial task in becoming more self-reliant. Over the Third Plan and over the future India will have to move forcefully in several directions. The three most important are, first, stepping up taxation very considerably; second, assuring that both public and private enterprises yield far greater surpluses to plough back into development; and third, drawing off more savings by borrowings from the public. Further, because India needs such a large amount of foreign exchange at this stage of its development, India must also continue its vigorous efforts to save on imports by manufacturing at home goods now bought abroad, and at the same time step up exports even of goods needed by Indian consumers.

In the Third Plan, all these methods of raising resources are to be used far more than in the past.

FINANCING THE THIRD PLAN

The problems of financing the Third Plan can most easily be taken up in its several parts: (1) How the government will raise the domestic finance it needs for the Plan; (2) How private enterprise will raise its finance; and (3) How the foreign exchange requirements of both government and private enterprise will be met for the five years.

(1) Financing the Government's Share of the Plan

Only about 45 per cent of the Central and State Governments' total expenditure over the coming five-year period will be Plan or new development expenditure. The necessary government expenditures "outside" the Plan—for defence, law and order, administration and the usual functions of government, as well as for the cost of maintaining the development services already started—necessarily take a good portion, about 55 per cent, of the total budget of a country of over 438 million people. Today, with higher taxes and more production in the economy these non-Plan expendi-

tures can easily be met out of normal taxes and other revenues, even leaving a surplus. The problem is to find resources over and above these expenditures for financing new development under the Plan.

Altogether, for the Plan, the Central and State Governments will need, as we have seen, a minimum of $15,750 million—$13,230 million for investment*, plus $2520 million for "current outlays" for extending social services and for certain administrative overheads on Plan projects and programmes.

The possible means for raising this amount for the Third Plan have been studied in considerable detail over the past year, in the light of recent financial trends and possible new taxes and savings, and discussions with State and Central Government finance departments. The National Development Council meeting in January 1961 adopted the Planning Commission's estimate of $15,750 million finance currently in sight, but noted that over $16,800 million in investment would be required to carry out the desirable and necessary physical Plan programmes just described in the preceding chapter. Whether development can be financed up to the target figure depends upon how far domestic savings can be stepped up to match and how much Plan expenditure will actually take place over the Plan period since, as we have seen, some expenditures on some projects will spill over into the Fourth Plan period. In the light of estimates of the 1960-61 and 1961-62 Central and State Government budgets and the possibility of obtaining more resources, a more optimistic view now seems justified of the total amount that could be raised by the Centre and the States. Thus, while government expenditures under the Plan are at present being set at $ 15,750 million, the aim will be to raise additional resources so that priority programmes may go further ahead as hoped.

*This figure includes $420 million which will be provided as direct financial assistance to selected private investments in agriculture, industry, housing, etc.

The proposals for raising $15,750 million by both the Centre and State Governments is shown in the following table, with the Second Plan figures given for comparison :

GOVERNMENT RESOURCES FOR THE THIRD PLAN

(in millions of dollars)

Source	Second Plan estimates	% of total	Third Plan	% of total
TAXES				
1. From Existing Taxes (Balance available above non-Plan expenditures)	—105	—1	1155	30
2. From Additional Taxes (Including measures to increase public enterprise surpluses) ..	2209	23	3591	
PUBLIC LOANS AND SMALL SAVINGS				
3. From Net Public Loans	1638*	25	1680	19
4. From Net Small Savings	840		1260	
NET CAPITAL RECEIPTS				
5. From Pensions and other Funds and Miscellaneous Net Receipts ..	483	5	1134	7
CONTRIBUTION OF PUBLIC ENTERPRISES				
6. From Railways Contribution ..	315**	3	210	7
7. From Surpluses of other Public Enterprises	***		945	
8. Deficit Financing****	1991	21	1155	7
TOTAL INTERNAL RESOURCES ..	7371	76	11,130	71
9. Foreign Assistance Contribution to Budget*	2289	24	4620	29
TOTAL CENTRE AND STATE RESOURCES AVAILABLE FOR THE PLAN ..	$9660 million	100	$15,750 million	100

*Net Public Loans in Second Plan includes loans to government by State Bank out of P.L. 480 funds. In 1960-61 and Third Plan, this item is covered under Foreign Assistance Contribution to Budget, which includes investment of P.L. 480 funds by Reserve Bank in special government securities.

**Inclusive of the increased fares and freights.

***Included in items 1 and 5 of table.

****Deficit Financing includes only short-term borrowing from Reserve Bank and draw-downs of government balances.

While considerable study has been given to these estimates, the experience of the Second Plan highlights once again the fact that the estimates for any single source cannot be exact. For the five-year period ahead, attention must be focussed on the problems and possibilities of raising finances as a whole rather than on any single source. Here the health and growth of the economy are the key points. On taxes, for example, only broad estimates can be made since growth rates in the economy will vary, affecting tax yields. Estimates of surpluses from many of the new government plants are at this time admittedly tentative. The availability of timely foreign assistance also has an important bearing on whether certain projects can get into and maintain full production and thus how much Indian funds can in fact be raised. However, the broad estimates given above generally indicate the size of contribution expected from the various sources.

Taxation

About 30 per cent of Plan expenditures are expected to be financed by existing taxes and from additional taxes. In all, taxes are the most important single instrument for financing the Plan from India's own resources. India's tax system must be both effective and flexible, able to draw out fairly, with due regard to the people's welfare and investment incentives, an increasing share of the national income for development.

A flexible and progressive tax system is also essential to assure, in this period of intensive growth, that those who benefit most from development contribute fully and fairly to it and that gross inequalities in income are reduced. Fair taxation then serves a necessary social as well as developmental aim in India, as in other democratic nations.

Proper tax measures have another aspect of special importance at this stage. By drawing off part of personal incomes, direct taxes will help hold down demand—and thus prices—for goods. Sales and other indirect taxes will also

help to hold down demand. This is an urgent problem in a rapidly growing economy with inevitable pressures on every side.

India has already built a tax system which includes personal and corporate income taxes, capital gains and inheritance taxes, and various forms of indirect—sales and excise —taxes. Over recent years new taxes have been imposed and have brought in considerably larger revenues. But the proportion of national income taken off in taxation has actually risen very little and is as yet less than a tenth of the total income in India. Clearly if India is to become more self-reliant, it must broaden its tax base and tighten up its tax system and administration. In advanced countries the proportion is 20-30 per cent; in several newly developing countries it is 15-20 per cent.

In a country with such low incomes, this is not easy, but it can and must be done and various possibilities are open for doing so. While personal income tax rates may be fairly high for the upper incomes, tax collection can still be improved. There are also lesser income levels, including the self-employed in trade and professions, which can be taxed more fully and equitably. As yet income taxes reach perhaps only 2 per cent of the working population. The capital gains and wealth taxes, etc., introduced during the Second Plan have not yet reached all the people who have benefited perhaps most from the country's growth. In all, India's present tax rates should, as the economy grows, be yielding far more than they do, and more effectively curb the inequalities of income that arise in a fast-developing economy.

Thus, on the one hand, tighter tax enforcement and administration are imperative to plug loopholes and prevent tax evasion; so too is a broadening of the coverage of those who are subject to income and other direct taxes.

On the other hand, greater reliance must be placed on indirect taxes—such as sales and excise taxes—to reach

other groups as well as to broaden the tax base. Such taxes must be imposed on luxury and semi-luxury goods which are bought by the rising income groups, to hold down demand for these goods and lessen inequalities in living standards. But indirect taxes will also be necessary on some common consumer goods, other than food, used by a broader majority of the population, including those low income groups who are not reached and generally cannot be reached by income and direct taxes.

Such taxes will be a burden, but in a country like India where the vast majority of the people are poor, development cannot take place on an adequate scale without calling for a measure of sacrifice from all classes of people, with the largest burden being placed, for reasons of social justice as well as revenue, on those who have benefited most from development.

These then are some of the tax policies and measures which will be used to raise tax revenues over the Third Plan and in later years as well. With the growth of the economy and tighter tax enforcement, existing taxes of the Central and State Governments over the Third Plan are expected to yield about $1155 million of revenue for the Plan—that is, over and above normal government needs*. This is a substantial increase in the contribution from tax revenues for the Plan, as compared with the last Plan period, but it should be possible.

There has been a sharp jump in tax receipts in the last two years partly as a result of increased economic activity and the additional revenue yielded by new taxes levied during the Second Plan period. In all, over the Second Plan, the proportion of tax revenues to national income rose from over 7 per cent of national income to about 9 per cent by the end of the Plan.

*The total revenues of India over the next five years from existing taxes will be over $ 19,425 million. After meeting necessary government expenditures "outside" the Plan, $ 1155 million will be available for new development under the Plan.

Over the Third Plan, the additional taxes to be levied are being counted upon as the major source of new government revenues. They are expected to yield nearly $3600 million over the next five years. This will raise the overall ratio of tax revenues to over 11 per cent of national income by 1965-66. Considering the needs of the Third Plan and the rise in income expected, this amount of additional taxation is considered a minimum. A good start in this direction has already been made in the Central Government budget for 1961-62.

Most of the additional taxes needed over the Plan have to be put through by the Central Government. But the State Governments must also raise their due share through sales and other taxes, particularly through land and agricultural taxes which are almost entirely their responsibility. On present estimates, the States have to raise over a third of the additional tax revenues called for under the Plan.

Public Loans and Small Savings

Loans from the public and small savings will form about 18 per cent of government developmental finances over the next five years. The Central Government expects to float public loans on a far larger scale than in the past*. The Life Insurance Corporation, various provident funds, State Banks and other financial institutions are expected to buy up a considerably larger share of these bonds. Government bonds are also being sold to the public like "Defence Bonds" in the United States and other countries. State Governments, local public utilities such as public-owned electricity boards, are also expected to float loans. In all, public loans are expected to raise $1680 million for development purposes over the Third Plan, a considerable rise compared to the Second Plan period*.

*On the resources table shown earlier in this chapter, the amount expected from public loans over the Third Plan appears to be roughly the same as the amount gathered over the Second Plan. But the actual amount will be very much higher. During the Second Plan, a substantial amount was lent to government by the State Banks buying securities with U.S. P.L. 480 funds deposited with them. Since 1960, P.L. 480 funds are being deposited with the Reserve Bank and are listed as Foreign Assistance Budget Contribution.

The possibilities for increasing small savings—through government bonds and postal savings sold in small savings campaigns—are large and will grow as incomes increase. Over the Second Plan $840 million was collected in small savings drives; the Third Plan hopes for half as much again, although this will take considerable organization and effort. The savings drives so far have been carried largely to cities and semi-urban areas. In the coming years more of the savings of the rural people are expected to be put into village cooperative societies. At the same time, a real effort will be made to promote more small savings in rural areas in various forms.

Contribution of Railways and other Public Enterprises

Profits from India's railways and other government-owned enterprises will be counted upon to provide $1155 million to finance about 7 per cent of the Third Plan's investment in development. An urgent question for the Third Plan and India's future is how such public enterprises can yield a considerably larger part of the nation's resources to plough back into development.

The Indian railways, long government-owned, have paid for a good part of their own expansion and contributed substantially to the national development budget for a number of years. But so far, government-owned enterprises—steel and fertilizer plants, heavy engineering and machine-tool works, etc.—set up mostly over the last few years, have not, with a few exceptions, begun to yield substantial surpluses for either their own expansion or to contribute to national development. They must however do so more and more in the future. The government investment in such plants, as well as in power, transport and irrigation, is becoming very much larger. As rapidly as possible, the nation must begin to get substantial returns on this investment, if the economy is to become self-reliant.

On the whole, getting profits from public enterprises is a relatively new problem for India. It focuses high and urgent attention on the efficiency of management, on cost-reduction techniques, on labour productivity. It also requires setting prices on the products of government plants—power, steel, fertilizers, etc.—which are fair to the economy but which will yield a satisfactory return for new investment.

Deficit Financing

It was originally estimated in the Second Plan that deficit financing* could be used to cover about a fourth of the government expenditures. When prices began to rise in the earlier years of the Plan and foreign reserves fell, taxes were increased and the amount of deficit financing sharply reduced. Because of the pressure on prices today, the Third Plan, as we have seen, proposes to raise taxes still further and limit deficit financing to the minimum justified by the real monetary needs and current economic conditions. The limit has been placed at $1155 million.

The amount of deficit financing that can be used has, however, to be judged from year to year in the light of the changing economic trends. What is required for carrying out the Plan are real resources and these depend upon how fast production goes up and how far India is successful in holding down consumer buying and increasing savings. Deficit financing within moderate limits has a place, but it must be controlled so that it does not add to purchasing power unduly at a time when the need is to hold down consumer buying, for the effects on the economy can be serious.

Budget Contribution from Foreign Assistance

The external assistance and foreign investment required by the Plan are discussed in detail in later pages. But we should note here that the net contribution of foreign assist-

*Deficit financing in India consists of short-term borrowing from the Central Bank, and a draw-down of government balances.

ance to government needs in the Plan is estimated at $4620 million*.

(2) Financing Private Enterprises Share of the Plan

The needs of government and private enterprise for financing have to be looked at together, since both draw from the same national pool of savings and foreign resources. Adequate financing has to be found for priority investment by both, in order to achieve Plan goals.

The Second Plan originally estimated that private investment would be about $5000 million. It has increased more than was originally expected, though some of the increase, as in agriculture, construction and small industries, is accounted for by a revised estimate of private investment. Present estimates are that private investment over the past five years has been closer to $6900 million**.

The Third Plan, as seen earlier, expects a substantial step-up in the level of private investment, to over $9030 million** during the next five years, about a third more than during the Second Plan. Today, private enterprise in every field appears more ready to make full use of the opportunities being created by the nation's growth. The following table (page 126) presents the likely kinds and size of private investment expected over the Third Plan period, with Second Plan comparisons.

The estimates given in the table are necessarily rough, since it is not possible to estimate closely the financing of all private enterprise in all parts of the economy. Part of private investment in an under-developed economy such as India's is not made in cash but in personal or bartered labour and

*The total of all external assistance required for the Plan is, as we shall see, $6720 million. Not all of this, even if forthcoming, is available to the government budget for development under the Plan. The following amounts must be taken out: $1050 million for government repayment of foreign debts falling due during this period; $630 million of foreign assistance for private industries; and $420 million for P.L. 480 foodgrains which will go into buffer stocks or will otherwise be outside the government budget.

**Includes $420 million financed out of government resources.

materials, and is not shown in the financial calculations of the Plan.

THIRD PLAN INVESTMENT BY PRIVATE ENTERPRISE

(in millions of dollars)*

	Second Plan Revised Estimates**	Third Plan Estimates**
Agriculture (including irrigation)	1418	1785
Power	84	105
Transport	283	525
Village and small industries	472	683
Large and medium industry and minerals*** ..	1523	2310
Housing and other construction	2100	2362
Inventories	1050	1260
TOTAL ..	$6930 million	$ 9030 million

In general, in the large-scale industries and small industries and transport, new private investment is expected to be considerably larger than the Second Plan. In agriculture, housing and other construction the increase will be only moderate, and private financing should be found readily enough out of private savings and even exceed expectations. In industry, tax and fiscal policies are designed to encourage the ploughing back of profits, and India's present corporation taxes provide various incentives for new development. These have greatly helped private enterprise to reach the high levels of development of the last five years. They will be continued, and also kept under review to assure that private investment goes to the priority needs of the economy.

While exact estimates are hard to make, the presently

*Second Plan at current prices in each year of the Plan; Third Plan at 1960-61 prices.

**Represents total private investment, including that financed out of government resources. (This will amount to $420 million during each Plan period).

***Does not include investment in modernization and replacement, estimated at $260 million in the Second Plan and $315 million in the Third Plan.

foreseen sources of financing for private large-scale industries and minerals are shown below :

FINANCING PRIVATE INDUSTRIAL EXPANSION*

(in millions of dollars)

	Second Plan	Third Plan
Self-Financing		
From net retained profits and reserves and other resources	840	1260
From new capital issues	315	420
Borrowing from Lending Institutions	170	275
Direct Loans/Participation by Central and State Governments	40	40
Direct Foreign Investment and Loans including Suppliers' Credits	420	630
TOTAL	$ 1785 million	$ 2625** million

The development programmes that private industry hopes to start in fact will call for somewhat higher investment than this (by about $200-300 million). Thus funds likely to be available to private industry fall somewhat short of meeting its full expectations. There is also the even more difficult problem of finding the foreign exchange for the programmes proposed. Private industry needs over $ 1000 million, or 40 per cent of the total amount it expects to invest, in foreign exchange. Sufficient foreign aid to meet these needs in full is not as yet in sight. Here much depends on whether foreign collaboration and investment can be arranged.

India will make every effort to see that the targets of private as well as government enterprise can be met in the case of industries of high priority. Industries which earn or save foreign exchange, either by expanding exports or by manufacturing goods which will substitute for imports, will have special consideration. Industry programmes will be

*Large-scale industry and minerals only.

**This includes $ 315 million for modernization and replacement, leaving a net investment of $2310 million.

reviewed regularly, and allotments of foreign exchange made every six months in the light of progress and the urgent needs of India's economy. In this way, it is hoped to achieve balanced progress.

(3) Foreign Exchange Needs of the Plan

The problem of foreign exchange, as we have seen earlier, is a particularly difficult one for a country at this stage of development. India's very effort to build an economy which can become progressively more self-reliant means, as we know, heavy purchases abroad for a time and thus heavy demands on foreign exchange.

Foreign exchange has either to be earned by larger exports or obtained from outside by other means.

The Third Plan has been drawn up on the assumption of limiting Plan imports to high priority items and other imports only to essentials, of increasing exports as much as possible, and of obtaining substantial assistance from foreign governments and institutions and from foreign private investment. India's foreign exchange reserves, which were drawn down sharply during the Second Plan, are now too limited to be drawn upon further.

INDIA'S BALANCE OF PAYMENTS

How much does India need to import from abroad during the Third Plan to run its economy and meet specific Plan needs? How much can it earn on its own in foreign exchange to pay for these imports? How can it finance the rest? These questions can best be seen in India's estimate of its balance of payments for the next five-year period, given on the next page, with Second Plan comparisons.

Estimating imports and other payments and earnings over a five-year period is not easy. The table shown here has been worked out, however, in the light of the best available data on recent trends in exports and imports, on the needs

of the Plan, and on reasonable expectations for the growth in Indian exports.

BALANCE OF PAYMENTS ESTIMATE

(in millions of dollars)

	Total Second Plan	Total Third Plan
PAYMENTS		
1. Direct imports of machinery and equipment for Plan projects	10,135	3990
2. Components, intermediate products, etc., for increasing capital goods production		420
3. Maintenance of normal imports		7665
4. P.L. 480 imports	1121	1260
5. Net capital transactions (excluding receipts of official loans and private foreign investment)	361	1155*
TOTAL PAYMENTS	$ 11,617 million	$ 14,490 million
RECEIPTS		
6. Exports	6411	7770
7. Net invisibles (excluding official donations)	882**	nil
TOTAL RECEIPTS	$ 7293 million	$ 7770 million
DEFICIT	$ 4324† million	$ 6720 million
Means of covering deficit:		
8. by foreign exchange reserves	1256	nil
9. by foreign assistance and private investment	1947‡	5460‡
10. by P.L. 480 assistance	1121	1260

*Includes $ 945 million repayment of capital falling due in the Third Plan.

**Includes reimbursements from U.S.A. for freight expenses on P.L. 480 imports initially incurred by India.

† This deficit was considerably larger—almost twice as large as originally estimated. As has been discussed elsewhere, the serious shortage of foreign exchange that developed in the early years of the Second Plan was due partly to under-estimation of foreign exchange needs, partly to the sharply rising tempo of private investment and the bad harvest seasons which required unexpectedly large imports of food and cotton. The deficit was met by cutting down the Plan, by imposing the stringent import control and allocation policies which are now in effect and by securing a considerably larger amount of foreign aid (about 50 per cent more) than originally estimated.

‡ Includes net drawings on the International Monetary Fund and foreign assistance required for financing above import and payment bill.

Direct Developmental Imports

Out of the total Third Plan investment of $21,840 million its *direct* foreign exchange requirements are $4260 million. That is, to start and carry out specific development programmes of the Plan, certain imports are directly and specifically needed—machinery to set up and equip the heavy engineering plants, for example, generators for power plants, locomotives for the railways, and the like. As might be expected, the heaviest need for foreign exchange is precisely in those fields—industries, transport and power—where India today must make its largest investment to become more self-reliant in the future. These foreign exchange needs for both private and government enterprise development projects have been estimated as closely as possible and are shown in the table below :

Direct Foreign Exchange Needs of Third Plan Development Programmes

(in millions of dollars)

	Total Investment in Plan	Foreign Exchange Component
By Government		
Agriculture and Community Development	1281	63
Major and Medium Irrigation	1365	105
Power	2125	672
Village and Small Industries	210	40
Large and Medium Industries and Minerals (including Oil)	3087	1449
Transport and Communications	3121	672
Social Services and Miscellaneous	1201	189
Inventories	420	*
Total Government	$12,810 million	$ 3190 million
By Private Enterprise		
Large and Medium Industries and Minerals	2310	1040
Village and Small Industries	682	30
Others	6038	nil
Total Private Enterprise	$ 9030 million	$ 1070 million
Grand Total	$ 21,840 million	$ 4260 million

*The foreign exchange component under "inventories" is spread among all the items listed.

Although the total direct requirements for foreign exchange in the development programmes of the Plan amount to $4260 million, it is not possible, even with the amount of foreign aid already assumed, to provide them all. About $3990 million is all that can be permitted now, in the light of India's tight foreign exchange position.

Components and Intermediate Products

Another necessary part of the Plan is the import of "indirect" development goods—components and other intermediate products—needed to increase the output of key equipment, particularly machinery and transport equipment. The dividing line between these goods and direct developmental imports is by no means clear-cut. The small amount allotted for them above in India's projection of its needs is meant primarily to highlight the fact that carrying out Plan projects requires the import not only of complete machines but also of materials to manufacture equipment in the country. The need for them will grow for some time as machine-building and other capacity develops but will diminish over the longer period as the economy becomes progressively more self-reliant.

Maintenance Imports

In addition to imports more closely related to development, there are the continuing general needs of the economy for so-called "maintenance imports"—raw materials, replacement machinery, fertilizers, foodstuffs, petroleum and essential manufactured goods, etc.—to be provided for. Many of these maintenance goods are also to be used to increase the output of key development programmes under the Plan. In spite of a stringent import policy, a total of $7665 million must be earmarked for such imports over the Third Plan as the minimum necessary to maintain the economy. Actually, the needs are larger; an estimate of $8000 million over the five-year period would not be too high.

Nevertheless, it is not possible at this stage to provide more resources for this purpose. Need for these goods will drop in the latter part of the Plan as India produces more of them on its own, but this will in part be counter-balanced by new needs for other kinds of goods.

A major aim of the Plan is the achievement of self-sufficiency in foodgrains, but food imports will be needed until farm production rises high enough. Maintenance imports above include the foodgrains which must be bought in the world market in addition to the 17 million tons already provided by the U.S. under P.L. 480. Maintenance imports include also fertilizers—essential until India's own fertilizer plants can be built to fill its needs.

Repayments on Loans and other Capital Payments

During the Third Plan, payments on many of the loans already incurred for development will be falling due and will place a heavier burden on India's supply of foreign exchange. In all, repayments of loans and credit total $945 million. With payments to Pakistan under the Indus Water Treaty agreement and other payments, capital repayments in the Third Plan period come to $1155 million.

One of India's needs is to rephase, as far as it can, the payments on the short-term loans obtained in the Second Plan. There is also the need, now being recognized, for longer-term financing on Third Plan loans. Development is a long-term process and India's ability to repay will be far greater in later years than today.

The Payments Picture

Looking at all these needs for financing imports (and thus for foreign exchange) over the Third Plan, it is clear that action is needed on several fronts. Imports must be held down to minimum essentials, and production within India of important goods must increase to replace costly imports as far as possible. Both are basic parts of India's development strategy toward greater self-reliance.

On the other side of the picture, exports must be expanded significantly. This is now being done to the utmost extent possible. However, to meet the remaining gap between imports and other payments and possible foreign exchange earnings at this time, India has to rely on substantial foreign assistance.

Expanding India's Exports

It has been clear for some time that a sharply intensified export drive is essential if the country is to become more self-reliant. Considerable emphasis was put on export promotion over the last two or three years, and the volume of exports rose by 9 per cent in the Second Plan period. But because of falling world prices for some of India's exports, this gain did not show up in larger export earnings, which have remained more or less stagnant. This has caused serious concern.

Over the Third Plan, by a concentrated export drive, India intends to step up export earnings by 32 per cent—to $7770 million. Export promotion has indeed become a vital part of India's economic policy.

India's largest traditional exports have been chiefly based on agricultural produce—jute, tea, cotton textiles and the like. These are exports for which there is only a slowly rising world demand, although there is certainly some room for expansion, notably in vegetable oils, short staple cotton, coffee, tea, tobacco and spices. Every effort will have to be made to increase these traditional exports; work already done over the Second Plan is bearing fruit.

What is clear today, however, is that India must put increasing reliance on stimulating new exports, especially of new manufactured goods—the products of its growing engineering, metallurgical, chemical and pharmaceutical industries. Over recent years, although exports of agricultural produce did not improve, exports of new manufactured goods rose markedly, especially bicycles, fans small motors and

electrical goods. Iron ore exports have also significantly increased. This clearly shows that India's ability to become more self-reliant rests on the growth and diversification of industry, as well as on exportable minerals and other products. It also shows the need for special encouragement of exports of these goods and for a drive to develop existing markets and establish new ones.

To reach the high export targets it has set, India has proposed some specific measures to be taken. One of these is to hold down demand for these goods in the home market (by taxes and other means) and thus assure that enough are available for export. Another is to introduce special incentives—price or other—to encourage manufacturers to sell more abroad in spite of the attractiveness of the growing Indian market. In some cases, it may be necessary to set aside specific quotas of goods for export at competitive prices. Another is to deliberately devote larger resources, including investment, foreign exchange, supplies and transportation to industries now producing or capable of producing goods for export.

In addition to such measures, India will continue and expand some of the export programmes already begun—export promotion councils; covering of export risks by insurance; tax refunds; removal of export controls, of quota restrictions and export duties. Attempts have also been made to diversify and expand India's foreign trade in new areas through the State Trading Corporation and the development of government-to-government trading relations with the U.S.S.R. and Eastern Europe.

More attention is to be given to developing closer economic relations with South and South-East Asia, West Asia, Africa, South America and West Indies. Increased exports to the European Common Market countries, United Kingdom and North America are vital, as these are large and growing markets. It is also hoped that the industrialized countries will help make it possible for India to pay its way in world

trade by removing any present restrictions on imports from developing countries.

With all these measures, the Third Plan estimates that exports over the Plan period will total $7770 million—an increase, as we have seen, of about one-third over present levels. Even this high figure must be considered a minimum one; a much larger volume of exports is actually needed. But experience in India and elsewhere shows that such a large export drive is by no means easy to accomplish and depends upon cooperating countries as well as Indian efforts.

Foreign Private Investment

Another means of enabling India to become less dependent on foreign aid is foreign private investment. Many countries in the past have developed faster with the help of foreign capital, and foreign capital is now indispensable to assure India's rapid growth. India welcomes this foreign collaboration and financial participation. In particular, foreign investment is being encouraged in fields where India's own level of technical advance and knowledge is as yet scanty, and in basic industries which demand considerable foreign capital equipment as well as technical know-how, and which are essential to the country's growth.

Encouragement of foreign capital, and India's political and financial stability since Independence, have brought in additional foreign investment over recent years. The total foreign private capital invested in India increased from $960 million to $1280 million between 1955 and 1959. It is hoped that this amount will grow. To encourage foreign capital, India has recently set up an Investment Centre to provide potential investors with information on investment opportunities and to seek and consult with possible foreign collaborators. Two other agencies also seek to encourage a greater flow of foreign private funds and other foreign financing into India. These are the Industrial Credit and Investment Corporation set up early in the Second Plan and the

Industrial Finance Corporation established earlier, both of which provide long-term credit to industry. In all, particular encouragement is being given to foreign capital to establish essential industries in collaboration with Indian enterprises. Repatriation of original capital, reinvested profits and capital gains are freely permitted.

With all such means and active promotion and the growth of the economy, the government believes that foreign capital will be invested on a significant scale to aid India's development.

Foreign Assistance

The foreign aid including private foreign investment needed for the Third Plan is now estimated at $6720 million. This compares with $2950 million used in the Second Plan. The substantial increase is an indication of the size of India's present development effort and its urgent need to build a more self-reliant economy.

India's foreign exchange earnings are sufficient to cover her very substantial "maintenance" imports, assuming that foreign debt repayments falling due over the Third Plan can be rephased. What India therefore needs in foreign assistance and investment is the following:

(1) Foreign assistance to finance the direct development imports of Plan projects and programmes plus component imports for increasing the production of capital goods; (2) the lengthening or rephasing of payments on past debts which will fall due during this period, or to the extent this is not possible, assistance to pay for maintenance imports so that India can make these debt repayments out of her own earnings; (3) P.L. 480 imports, which are already arranged.

These can be summarized as follows:

(in millions of dollars)

Payments for direct developmental imports (capital goods and equipment required for Plan projects)	3990
Payments for components, balancing equipments, etc., for increasing the production of capital goods	420
Re-financing of previous loans now falling due	1050
P.L. 480 imports (already arranged)	1260
TOTAL	$6720 million

It will be remembered that requirements for direct developmental imports and components, as well as maintenance imports, are larger than shown. But actual purchases must be limited to these amounts, unless export earnings can be expanded to pay for more.

It is realized that the aid needed for the Third Plan is large and there was concern in the early stages of the drafting of the Plan whether the need could be met.

In general, as mentioned earlier, prospects of being able to secure the necessary minimum of $6720 million in foreign aid have recently become more encouraging. Early in 1960, the World Bank sent out a mission of three eminent bankers to study India's Third Plan developmental problems and requirements. The report of the mission indicated the broad lines along which resources from abroad could assist in carrying out the essential programmes of the Third Plan. Later an expert mission from the World Bank also made a detailed and technical study of the Plan, including its foreign exchange needs.

Moreover, there has been for some time a growing recognition abroad that, to be most effective, aid to developing countries has to be made available not on a year-to-year basis but for longer terms so that planning can be done for essential longer-range development programmes. It is also more widely recognized that assistance should take into account not merely the needs of particular projects and programmes, but of indirect and maintenance needs for the growth of the economy as a whole. It is also realized that the repayments should be spread over a longer period of time to enable the economy to bear the burdens more readily. Ways of resolving these problems are now being discussed by the aid-giving countries and lending agencies, and will need their concerted action.

Over the past year or so, several meetings have taken place, under the sponsorship of the World Bank, of the Consortium of friendly countries interested in India's

economic development, specially on the large financing needed at the start of the Plan. With India's own foreign exchange reserves so low, a quick start on Third Plan projects could not be made unless foreign financing was arranged very early.

India is gratified that at the meeting of the Consortium, held in early June, 1961, India has been assured of assistance totalling $2286 million to provide both immediate support to her balance of payments and to cover mainly the import orders to be placed during the first two Plan years, 1961-62 and 1962-63. The United States has agreed to provide the largest share, amounting to just under half of the total, $1045 million. This is in addition to the P.L. 480 foodgrains and farm commodities agreement of about $1300 million which was arranged with the United States a year ago.

The other members of the Consortium have offered assistance to India totalling $1241 million, also mostly to cover commitments in the first two years of the Third Plan—West Germany $425 million; the United Kingdom $250 million; Japan $80 million; Canada $56 million; France $30 million; and the World Bank together with the International Development Association, $400 million. These are all sizable step-ups in their contributions to India's development and, aside from their size and timeliness, are promisingly adapted to project and general import needs of the Plan.

The U.S.S.R. has already authorized two credits amounting to $500 million for use on Third Plan projects. A number of other friendly countries, namely Czechoslovakia, Yugoslavia, Poland and Switzerland, have also extended credits totalling $141 million for projects in the Third Plan.

The carry-over of total foreign assistance available from the Second Plan is of the order of $767 million. This, together with the fresh assistance mentioned above, can give the Third Plan a good start. Further meetings of the Consortium

are proposed from time to time for reviewing the progress of the Third Plan and for considering India's needs for foreign financing in the remaining Plan years. Some countries, not yet members of the Consortium, have also expressed interest in assisting India in financing the foreign exchange needs of its Plan.

All of these new efforts in the field of foreign aid are highly encouraging; they represent a bold and cooperative approach to the problem of assisting development in the under-developed parts of the world. They highlight at the same time the corresponding need for the utmost effort on India's part to mobilize its own resources, and to ensure in every possible way that the aid made available is used effectively and efficiently, to yield the utmost returns in production and growth to the economy. They also emphasize again the need for the utmost possible effort to expand vigorously India's exports.

The foreign exchange difficulties that India is facing are, it must be stressed, not short-term or temporary; they will continue for several years to come as a result of the very effort to develop. Foreign aid is essential for this period, but as we have seen, India's aim today is to build an economy more and more self-reliant so that dependence on foreign aid is progressively cut down. The Third Plan represents a crucial stage in this process.

In summary, then, financing the Plan will put a heavy burden on the Indian people, on Indian enterprises, public and private, and even beyond this, ask sizable help from friendly countries. Yet the goals, the hopes of the Plan—to bring about better living standards with greater self-reliance—cannot be achieved unless the Indian people today are prepared to bear their heavy share of the burden of development. Today and over the next fifteen years and more, they must carry an increasing load of taxes, hold down their buying to essential goods, sacrifice to the export market many goods they want and need at home, contribute the

utmost in savings towards their country's growth. Those who benefit most from development must contribute the most. For government and private enterprises, the urgent need is to produce at high efficiency in order to step up savings to plough back into new growth. For many in industry and other enterprises, the necessity to concentrate on essential production, to work within the constraints of scarce foreign exchange and of import licences and controls is, although it may be irksome, part of the inevitable price and burden of this stage of development.

To prevent undue price rises, to apportion taxes and burdens fairly, to assure that the utmost resources are drawn from every individual and every part of the economy will call, throughout the Plan, for high economic statesmanship. Yet, even at best, the economy will operate under strain. The search for financing, the push for higher production, the need for greater austerity will be a continuing one. But the goal is high and worth its price—a more self-reliant economy, more and more able out of India's own efforts to provide a rising standard of living for the Indian people.

CHAPTER VII

ADMINISTRATIVE PROBLEMS OF DEVELOPMENT

As India begins its Third Five Year Plan, it realizes perhaps more fully than ever before that the Plan's success will rest very largely on the efficiency with which it is carried out. To turn India's hopes and plans into concrete achievement demands high standards in administration, efficient management of private and public industries, and the utmost effort from everyone involved with a development programme on any level, as well as from the public. The targets set by the Plan assume that this kind of support will be forthcoming. Of the many assumptions on which the Plan is based, this is not only the most important but also the most difficult and challenging.

Efficiency in Government

In facing the job of administering its own development plans, India is particularly fortunate in having a strong foundation on which to build. At Independence India inherited an efficient administrative system and a network of competent and experienced civil services wholly committed to the public interest and welfare. Over the past decade, India has introduced many changes to strengthen and diversify its administrative structure, improve training and raise standards. But the size and complexity of the tasks of development has grown; and at many points, the administrative system has been strained, and is short of enough qualified personnel. With increase in the tempo of development, the need for certain administrative reforms has attracted pointed attention and assumed greater urgency.

One of the most important needs is to speed up decisions and action, and reduce or eliminate delays in carrying out development programmes.

There are many sides to this problem. Already systematic work studies have been introduced to identify specific administrative bottlenecks, more attention has been paid to organization and methods, to providing incentives and evaluation of performances. Over the Third Plan these measures have to be supported by better training and supervision of personnel and still more careful evaluation. Even with all these measures, however, it is clear that a strong, concentrated effort is necessary in every field to make the administration more action-oriented.

One urgent need is to delegate and fix responsibility, since in a large, complex and growing administration responsibility is sometimes too diffused. Further, both for quick disposal of business and for effective delegation of powers and functions, ministries and secretariats should limit themselves to broader policy decisions rather than get into details or infringe upon executive functions. This principle is already being applied in several fields, notably in budgetary and financial control, in personnel administration within the government, and in carrying out construction programmes.

Strengthening of executive agencies, conferring greater responsibility upon them, fixing specific responsibility for producing results within agreed time-schedules, are other essential means for ensuring that the administration becomes more action-oriented and capable of carrying the enormous burdens placed upon it.

India also hopes to make more use of incentives both to speed up performance and help build morale, especially a better system of awards and recognition for superior service. In government-run industries these incentives can be tied to specific achievements in reducing costs and improving methods and production.

Finding and training adequate personnel for administrative jobs in government, and in government-operated industries, will be a problem in India for some years to come,

especially in certain fields where there is not only a shortage of trained people, but considerable competition from private industry and commerce.

India too, in common with advanced private industry, has realized more fully in recent years the need and implications of highly skilled management for large projects as well as for its many development programmes. To build up competent managers who know their job and have the ability to lead is one of the key tasks of the Third Plan in every field. For the most part these men must be found in the middle grades of personnel. Over recent years great pressure has been put on men at higher levels; attention now must be given to developing men in middle levels to take managerial responsibility. In each of the large projects of government, a positive and extensive training programme is necessary. Another important step is to assure that managers and other officials, when responsible and well trained, remain long enough in one post to grow to the full measure of their abilities. Frequent transfers—a practice too often adopted under civil service rules or for other reasons—not only interrupt operations and injure organizational morale, but prevent an official from involving and committing himself deeply enough in the success of the job. In any key assignment in a major project, frequently at least five to ten years' continuous service is necessary to produce important results.

Administration of Public Enterprises

India now owns and operates, as we have seen, a wide range of enterprises such as steel plants and other industries, irrigation and power projects, railways, road and air transport, shipping, etc. Some of them are already earning profits and the general policy is that all of them should do so to help finance not only their own expansion but India's development as a whole. They as yet contribute only a small amount but their earnings will become much more significant in the Third Plan and even more so in the Fourth. Their business-like management is thus of key importance to India's future.

Problems of efficient industrial management—common both to private industry and to government enterprises—are now receiving greater attention than ever before. Up till now, the main push has been to get the projects started. From now on, the equally important question is to manage the projects so that they become efficient producers, yield substantial profits to pay for further expansion and set an example of careful planning and good employee relations.

Several real problems are involved in managing public enterprises efficiently. One is their organization in relation to the government itself. Some, like the Chittaranjan Locomotive Works, are now administered departmentally (*i.e.* by the Ministry of Railways), a few more are corporations; the majority are joint stock companies. It is now felt that enterprises operating broadly in the same field should be brought under consolidated management in a single organization. Thus they can pool their resources and their purchasing and marketing operations, share research and design facilities and collaborate on recruitment and training. India has already established several of these larger organizations. Hindustan Steel Limited, for example, handles all government-owned steel plants and will take on responsibility for the new alloy and tool steel plant.

Whatever their form of organization, there is clear understanding today that managements of public enterprises must have sufficient freedom of action to be able to function in all their operations with considerable speed and to the best advantage. The present policy is to increase delegation of powers from government to the boards of public enterprises, from the boards to the general managers, and also within the management of each enterprise. At the same time, of course, all government enterprises must be fully accountable to the public. It is proposed that a special committee of Parliament be set up specifically to keep informed on the problems and working of public enterprises.

Shortage of experienced industrial managers of high calibre is a particular problem at this stage of growth. The shortage is being felt especially in such new fields as steel, machine-building, chemical industries and fertilizers, and coal and mineral development. In spite of many training programmes undertaken at several levels, with the support of countries like the U.S.A., the U.S.S.R., West Germany and the U.K., enough personnel with adequate experience and training is not yet available. There is also a real difficulty in securing enough skilled supervisors and foremen. Such shortages are bound to come up at a time when the Indian economy is being so radically transformed, and it is the constant effort of the government, in collaboration with private industry, to increase the supply of trained technical and managerial personnel with the utmost speed. Some of the training programmes being undertaken to supply skilled personnel are discussed in the following chapter.

Another management problem is careful advance planning—to assess technical problems, personnel needs, costs, and phasing of projects much more accurately than has so far been possible. Design and research units should have this job as one of their major functions and be able to draw upon selected foreign experts in cases where, as in industry and mining, not enough experienced Indian technical personnel is yet available.

Cost is an issue of special concern to planning authorities and administrators today. It is made acute by the recent increases in the cost estimates of many industrial and other projects. To some extent these could not be avoided. However, the urgent need now is to assure that from the beginning every project is placed on a sound technical basis, that estimates of cost are worked out in full detail, that modern cost-accounting, plant maintenance and other modern management techniques be used. It is also important that careful targets and norms be set and that the schedule of operations and arrangements for supply

of raw materials and for transport and power are planned in advance with the utmost care. It is proposed that every large project or group of allied projects should set up its own special unit whose only and constant job is to work towards reducing costs, raising productivity, keeping to time schedules and maintaining a continuing audit of performance.

Private enterprise is similarly concerned with problems of efficient management, and has to give increasing attention through the National Productivity Council, through local and national management associations and industry councils, to development of higher efficiency.

The early stages of industrialization are in many countries marked by high costs and low productivity, and experience in new fields has to be paid for. Over a wide range of industries, however, the handicaps described above are expected to lessen and even disappear as the scale of operations increases and as technical and supervisory personnel, managerial experience and techniques, and better coordination between different branches of the economy are developed.

Economy in Construction Costs

To develop, India has to build—build dams, bridges, roads, factories, offices, schools and hospitals. In many fields of development, construction costs account for a substantial part of all expenditures. The cost of construction alone in the Second Plan, and for government only, was estimated at about one-sixth to one-seventh of total Plan expenditures. The Third Plan involves much larger expenditures on construction. Economizing on construction costs is thus a very important part of efficient administration and the success of the Plan itself. The Central and State Governments, after close consultation on this problem, are agreed that the following main lines of action are necessary to keep construction costs down :

1. Careful advance planning of all details of the work, of personnel, materials and equipment needed and of probable costs and financial returns.
2. Advance arrangements to procure the land, equipment, personnel; and to provide, on the site, workshops, spare parts, necessary housing and other facilities, etc., to avoid long lags and delays.
3. Balanced use of machinery and manual labour so that construction machinery is used only where manual work would be far slower or more costly.
4. Economies in design, by planning projects or buildings on the basis of functional needs, using temporary or semi-permanent structures where possible, and standardized, pre-fabricated parts or designs. It is recommended that a central design organization should be set up for single large projects or group of projects.
5. Economies on contracting costs, which are now one of the largest factors, aside from planning and designs, in final costs. Tighter contracts, prompt payment, use of various types of construction agencies including voluntary non-profit ones—these are among the necessary steps to cut these costs.
6. More attention to personnel, including, on the one hand, training for new skills, and on the other providing a pool of experienced consultants. Transfers of personnel should be avoided while work is in progress.
7. Setting up a cost reduction unit for each major construction project to analyze methods and costs, and watch progress, with a special eye to cost factors.

Both in the Centre and the States there should be committees especially designated to review progress in cutting costs. Each major project should also prepare, from its beginning, a works progress report and finally a completion report as a check and a guide to similar work in the future.

Public Cooperation

From the beginning of the First Plan, a great deal of stress has been laid on securing public cooperation in carrying out development programmes. Voluntary organizations can play a particularly valuable part in community activities and have already done much. Many voluntary workers, especially women, have accepted the challenge and taken on new responsibilities.

As yet, however, the possibilities of involving the full energies of the people have not been fully realized. One of the many fields where voluntary groups have much to contribute is in social welfare activities. For example, in urban community development, experience so far shows that voluntary workers can do a great deal to stimulate community self-help programmes in the city slums. School lunch programmes are another example where volunteer work has already proved valuable and can be expanded. In rural areas large numbers of women workers are and will be serving in the women's welfare extension projects linked with the community development programme. The success of family planning as a nation-wide movement will depend in very large part on the work of voluntary organizations and women workers. A growing body of full time and trained voluntary workers are working to secure a better life for Harijans and other under-privileged groups. Labour and social service camps are enlisting young men and women to build schools, roads and other public works and undertake social service. Voluntary organizations equipped for construction work can play a particularly useful part in cutting construction costs, and have already done so. In the universities and in colleges and civic organizations, planning discussion groups comprising students and teachers, or private citizens can, as they already have, bring national goals closer to the people and enlist support for development programmes.

Public cooperation is itself a vast field, for in every

aspect of development there are many ways in which the community can contribute. The part the Indian people themselves play is of supreme importance in helping the nation reach its goals. To stimulate and draw out to the utmost their efforts, cooperation and support is one of the most rewarding if challenging tasks of administration.

Balanced Regional Growth

As with many countries, India has some regions which are well developed and others which are relatively backward. To some extent this is unavoidable. All regions are not equally favourable for industrial growth as, for example, desert or mountain areas without natural resources. It is extremely important for India, however, to balance development of all regions as much as possible, so that the people of those regions can have a fair share in new opportunities as India progresses. Taken as a whole, the Third Plan is designed to reduce regional inequalities, though of course the process is one which will take time as it has even in highly developed countries.

One way India is trying to keep the regional balance is to assure that education (especially vocational and technical training), health and other basic social services are spread evenly and fairly over every part of the country. Community development is of course a national programme and by 1963 will reach all the villages in India. A similar effort is being made to provide power, safe drinking water, transport and communications in all regions however backward or remote. Special areas which have particularly difficult problems—such as areas subject to floods—have had, and will continue to get special treatment and development.

In locating new industries and projects, government or private, the need for balanced regional growth is an important consideration. For example, in deciding to start river valley and multipurpose projects, which are an important

part of many State plans, the problems of scarcity-affected areas have always been influential. These large projects can become centres of new industrial and economic growth. Experience has shown however that special efforts must be made to integrate them to the region as a whole.

For large industrial projects, economic considerations —nearness to raw materials, availability of trained labour and transport, etc.—have to come first. But several important industrial projects, such as the steel plants at Bhilai and Rourkela and the Heavy Electrical Plant in Bhopal, though their location was fixed on the basis of economic needs, have in fact been put in areas which were hitherto industrially backward. Other similar areas are being benefited by the opening of new mines and mineral deposits, formerly unexploited or partially developed, such as the lignite deposits in Arcot, the bauxite deposits at Salem and the lead-zinc and copper deposits in Rajasthan.

Looking to the future, there is a wide range of consumer goods and light engineering and other small processing industries which can be located in backward areas, more especially if power is made available. Indeed, the industrial handicaps of certain regions, because of lack of deposits of coal and oil, may be markedly reduced as electrification spreads.

Many States, moreover, concerned with their development as a whole, have been getting careful studies and techno-economic surveys done, by government and independent research bodies, of their problems and possibilities for development and are using these surveys as a basis for their planning. In all, assuring balanced regional growth will be a continuing policy and administrative concern for both the Central and State Governments.

CHAPTER VIII

EMPLOYMENT AND MANPOWER

EMPLOYMENT is going up as India develops. It rose by as much as 8 million in the last five years alone—a very sizable increase. The character of employment is also changing. Far more jobs today than ten years ago are technical and professional jobs—for engineers, school teachers, doctors, nurses, skilled workers, foremen and managers. In fact India, like all developing and many advanced nations, has a shortage of skilled and trained people. But at the same time unemployment is one of India's major social and economic problems.

Without question, among the greatest challenges of Indian planning is on the one hand to train the skilled people it needs and on the other, to create new employment and find new ways to use its vast supply of manpower, skilled and unskilled. Certainly this is true for the Third Plan, and will continue to be so for the Plans and years to come.

THE PROBLEM OF FULL EMPLOYMENT

Unemployment has been high in India and a cause of real concern for many years. Over 30 years ago Mahatma Gandhi called it "India's problem of problems". To a considerable extent, unemployment is characteristic of an under-developed country. It is in fact in itself a sign of "under-development". In a country's early stages of growth there are relatively few jobs in industry or other "off-the-farm" work. In India moreover—in contrast, say, to Africa and Australia—land is scarce, and there is not enough land to provide work in farming. The jobless drift to the cities where unemployment is felt even more severely. For India too the employment problem in both city and

village is made far more acute by the fast-growing population, which is now bringing over 3 million people a year into the labour market. A country has to be in a fairly advanced stage of development to create enough training facilities and enough job opportunities for such a vast population. Looking at things realistically it will take time—good deal of time—for India to create conditions of full and productive employment.

Stimulating more employment is one of the major goals of Indian planning. Today, however, when after ten years of development, progress in creating employment has not been great enough and when population is growing so rapidly, the problem has a new urgency. Over the next five years 17 million more people will come of age to seek work; in the next 15 years 70 million. Obviously creating employment on this scale is a tremendous and formidable task.

India's development programmes so far have created considerable employment—but not enough or fast enough to absorb the backlog of unemployed as well as the number coming of age to seek work each year. Although the Second Plan alone created about 8 million new full-time jobs (6.5 million of them off the farm), this was less than hoped. With the backlog of unemployed with which the Second Plan started, and the population increase since then, there are today about 9 million unemployed. The number of under-employed in city and village, that is, persons who have some work but are willing to do more, may be as high as 15–18 million.

The Third Plan starts then with a backlog of 9 million unemployed. With 17 million more young men and women coming of age to seek work during these next five years, the Third Plan's target is to create employment for these 17 million at least, so that unemployment does not grow worse.

While it is not easy to judge precisely how much

employment a given programme will create, the most careful analysis possible now of the development programmes proposed for the Plan, plus a deliberate effort to use far more manual labour than in the past in many kinds of projects, especially in construction, indicates that, in all, about 14 million new jobs can be expected in the next five years. This is not a fixed and final estimate, for methods of calculation are not yet precise, and past experience shows that continued study and assessment of employment is necessary.

NEW (NON-FARM) EMPLOYMENT EXPECTED BY 1966

	(in thousands)
Construction*	2300
Irrigation and Power	100
Railways	140
Other Transport and Communications	880
Industries and Minerals	750
Small Industries	900
Forestry, Fisheries and Allied Services	720
Education	590
Health	140
Other Social Services	80
Government Services	150
	6750
Trade and Commerce (estimated at 56 per cent of the above total)	3780
TOTAL	10,530 or 10·5 thousand million

Another 3.5 million jobs will be created in rural areas, and there will be in addition some relief from underemployment. The total of new job opportunities that can now be foreseen for the Third Plan period will thus fall short by about 3 million out of the 17 million jobs needed by the new arrivals in the labour force over the next five years. Past experience, moreover, has shown that reaching employment targets is not easy.

India proposes therefore to take vigorous steps on several fronts to assure that the targets are met and if possible

*Over half the employment in construction (1·3 million jobs) is expected in agriculture and community development and irrigation.

exceeded. One of the most important steps is to require that all development projects and programmes are deliberately planned to make the maximum use of manual labour. The new modern industries India is building are based on high productivity techniques. Manufacture of steel, fertilizer and machine tools, for example, are and must be highly mechanized and cannot in themselves create a great deal of direct employment. In other fields, however, the choice of techniques is a matter of crucial importance. Very particularly in construction work, all projects must from now on give preference to manual labour rather than mechanized processes, except where mechanization means considerable economies in cost or time.

Another effort will be to stimulate to the utmost the employment possibilities in small industries. A considerable increase in employment can come from helping small industries, which have already started up, to expand and produce to their full capacity. Many are today held back by lack of raw materials, credit, technical and design advice and thus cannot employ as many new workers as they are otherwise well organized to do. India's present nation-wide system of small industry extension services, credit, supply and marketing facilities must be improved and streamlined, not only to increase production but also employment in small industries.

Another promising possibility of stepping up employment, in rural areas particularly, is the spread of rural electrification. By the end of the Third Plan, almost all towns of over 5000 population plus some 38,500 villages are expected to be electrified. The fullest advantage has to be taken of this opportunity for the encouragement of small-scale enterprises using power. There are also many other types of rural industries, which may or may not use power—food packing and processing, manufacture of farm implements and of local fertilizers, production of bricks and other building materials—that could and should be stimulated.

Further, since the biggest need for employment will be in rural areas, where the population gain will be heaviest, a great deal can be done by attacking the problem locally by district, block and village. Not enough attention has been paid to this possibility so far. There are many local projects for new community services and improvements—wells, schools, roads, etc., which can be handled as employment programmes using local labour. As many of these programmes as possible are to be started with the help of the district, block and village organizations.

A special problem in India is that of the educated unemployed. While India has greatly expanded its facilities for training people for skilled jobs and professional work and will continue to do so, there are a large number of high school and college graduates who have had only a general education rather than any specialized training. Exact figures are not available, but perhaps as many as a million of these young men and women are today unemployed. A considerable number of those registered as unemployed are young men with six or more years of schooling up to one or two years of college. They cannot find jobs in cities unless they obtain technical training of some kind or other, or at best can find only relatively low-paid jobs. Since many of them are from rural areas, it is expected that new job opportunities will be opened for them by the development of farm cooperatives for credit and marketing and of rural industries. Special short-course training is planned to equip them for this type of work. Rural areas could thus keep their ambitious young people and have the benefit of their talents and leadership far more than has been the case so far.

Rural Works Programme

Even with all these measures, and even if all proposals for reaching employment targets succeed—in large and small industries, in agriculture, in all trades and services—they will provide new jobs for about 14 million people. The Third

Plan's goal however is to create employment for 17 million, to take care of all the arrivals in the labour force and keep unemployment from growing worse. India must therefore provide work for some 3 million more people than its development projects specifically include.

Potentially this enormous labour force can be an asset, rather than a problem. If it is properly organized and used, carefully directed and led on well planned "labour-intensive" projects, it can make a tremendous contribution to India's development. This is precisely what India plans to do. India proposes to start, on a nation-wide scale, a vast rural public works programme, the first of its kind in India. The programme is expected by 1966 to give employment for about 100 days in the year to 2½ million people, mostly from rural areas.

It will be carried out in all States, with especial emphasis on areas where there is heavy unemployment. The work to be done will concentrate principally on projects which are important to improve the land and raise farm production—irrigation works, soil conservation, contour bunding, desilting of reservoirs and canals, road building and reforestation. All these are projects which, if they are well planned and organized, can effectively put to work very large number of unskilled and semi-skilled rural labourers. And all are projects of real significance in developing the country as a whole.

The exact form of organization for running this vast rural works programme is now being developed on general lines of policy and action already laid down. The main projects to use large forces of skilled and semi-skilled labour will be on the one hand those which are local in character and will be done in cooperation with village and block leaders and organizations. There may also be some larger projects requiring technical planning and supervision, either on a State or national level.

In preparation for the nation-wide rural works programme,

over 34 pilot work programmes have already been started in the States and the number will be increased five-fold by early 1962. Evaluation of these projects is being made as they go on to find out the most successful methods of planning and organizing such mass use of labour.

With this experience in hand, India hopes to employ 400,000 to 500,000 people by the second year of the Plan, a million by the third year and 2½ million by the last year, 1965-66. Funds are being provided up to a total of $315 million (Rs. 150 crores) over the Plan period as a whole. The main cost of the programme will be the wages of the labour force. Wages will be at the prevailing village rates. At present this averages about 30 cents a day. As the programme expands, and as foodgrains become more plentiful, paying part of the wages in foodgrains may be considered.

Other kinds of local projects that can use a fair amount of labour are those which build up income-producing community assets such as village reservoirs, fisheries, fuel-wood plantations and common pastures. Such projects will have to be worked out in terms of the needs of the development block as a whole as well as for individual villages. The work will be arranged through the villages. The government departments concerned—such as the Departments of Fisheries, Forestry, etc.—will have to provide the necessary technical assistance and such supplies as seedlings for fuel plantations or fingerlings for fisheries development.

Several types of smaller projects are also considered, some of them to be run entirely by local communities—such as building local schools, wells and roads to which the village itself contributes, maintaining village roads and reservoirs and irrigation channels, etc. Some government funds are already available for this sort of work under the community development and other programmes. Some of this maintenance work has been traditionally required by law in India, but has not been done consistently. Doing it on a regular sustained basis will mean considerable employment.

It is also proposed that legislation should give power to village *panchayats* to enforce these maintenance obligations, and to see that the necessary work is done. Similarly, legislation is to be proposed to empower State Governments to plan and carry out soil conservation projects for the basin of a river or a stream, or for a group of villages. Such projects will involve considerable works programmes by the States, by local village *panchayats* and individuals directly benefited.

Trained Manpower for India's Development

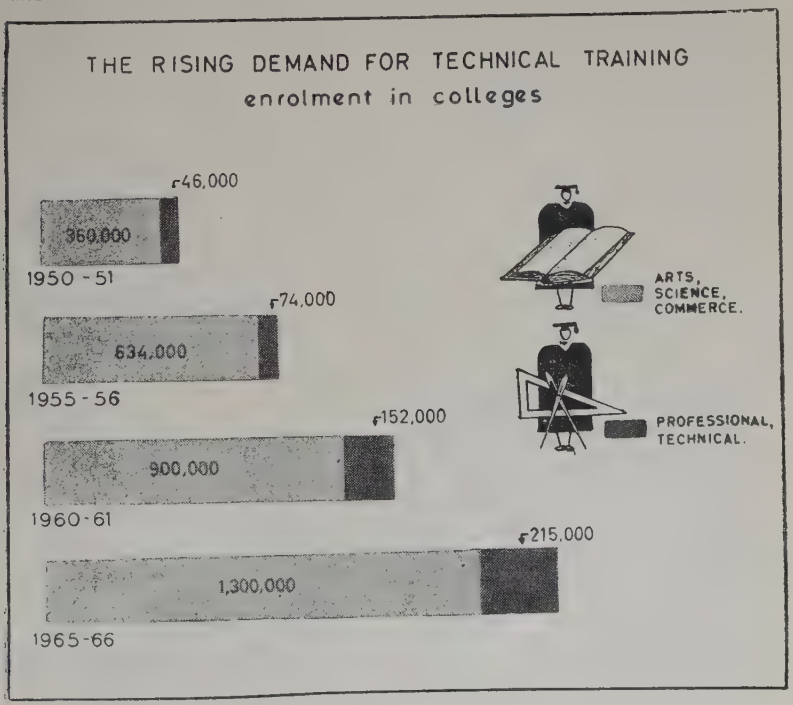
At the same time that India tackles the problem of unemployment for the nation as a whole, it must also plan to meet shortages of the trained men and women it needs—the doctors and nurses, the skilled workers, teachers, scientists and engineers. This is a problem which India shares, of course, with advanced countries. But for a developing country the problem is particularly acute. Indeed, perhaps of all the resources needed at this stage of India's growth, the most fundamental is trained manpower. The number of trained people available—to build power systems, run steel and fertilizer plants, man hospitals and schools—determines in fact how fast the country itself can grow.

India must, moreover, estimate its needs for manpower and training facilities not for the Third Plan alone, but look ahead to the needs of the Fourth and Fifth Plans as well. It takes five or more years to train an engineer or doctor, even longer to develop the practical experience and skill needed in positions of high responsibility. Facing facts realistically, it may take as long as a generation to produce enough scientific and technical personnel for India to become a technically mature society.

During the Second Plan, manpower studies made considerable headway in India; training of the technicians, both men and women, likely to be needed in the Third and the Fourth Plans has already started on a wide scale. But today,

with the urgent needs ahead, much more must be done—to expand and reorganize training institutions, to introduce new methods of speeding up and intensifying training, to discover new ways of using scarce trained personnel as a key resource, to use foreign technical assistance most effectively.

Better and closer assessments of manpower needs are urgent, and these must be recalculated from time to time in the light of new and unforeseen demands. It is already clear, for example, that present estimates of future manpower needs are likely to be too low. India is shortly setting up an Institute of Applied Manpower Research which will work closely with the Central and State Governments to get a broad perspective of needs over the future, and discover ways to build up and use the country's human resources to the utmost.



Technical training has a high priority in India's educational system for the Third Plan. Over $580 million (Rs. 276 crores) will be spent on developing training institutions for engineering, medicine and health, agriculture, and for training of skilled workers. This amount is more than twice the sum provided in the Second Plan and six times as much as in the First Plan—an indication of India's ever sharper realization of the need for more technically trained manpower.

Engineering Personnel

The Third Plan will require about 151,000 more trained engineers than it has today, almost twice as many newly trained men as were needed during the Second Plan. Fortunately, training facilities have already been greatly expanded, and this very high requirement can be met largely out of existing colleges and polytechnics, although there will be a real shortage of diploma engineers, if not of graduates. The number of engineering colleges has doubled in the last decade to a total of 100 and the number of polytechnics more than doubled, to a total of 196. Together these two types of institutions can take in over 39,000 new engineering students a year.

In the Third and later Plans, engineering training will be more diversified, to meet the new needs of new industries. There will be more and more emphasis on mechanical, electrical and chemical engineering and on mining, metallurgy and other technologies, and also on post-graduate work and fundamental research.

India foresees a demand for over 200,000 more trained engineers in the Fourth Plan, 1966-1971. Preparations to meet this demand are necessarily being made now. Present engineering colleges and polytechnics will be expanded, new institutions will be set up (17 more engineering colleges, 67 more polytechnics) and part-time and correspondence courses will be started over the Third Plan period. Half of

all the funds available for technical education will go to developing engineering and technological training. A large merit scholarship programme will be started, large enough to give 18 per cent of all technical students (as compared with 5 per cent today) financial assistance.

Training of Skilled Workers

Rough estimates are that India will need about 810,000 skilled workers in engineering trades and about 460,000 in non-engineering trades over the Third Plan.

In India training of skilled workers is done largely by industrial training schools, although more high schools today are putting in vocational courses. There are nearly three times as many industrial training centres as five years ago, with facilities for training over four times as many men (42,000 in all). But considerable expansion is still necessary, and will be carried out for the Third Plan, to provide training facilities for 100,000 men. Some men will also be trained under a national apprenticeship programme. Altogether about 200,000 skilled workers will be trained during the Third Plan. In-plant training for six-month periods and evening classes for employed industrial workers are also proposed on a very wide scale. The Ministry of Labour and Employment is to introduce a bill before Parliament to regulate training programmes in industry and make apprenticeship training compulsory.

A number of ministries and government agencies conduct special in-service or practical training programmes. Various All-India Boards including those responsible for small-scale industries, handloom weaving and handicrafts also offer special facilities for training in various trades and crafts. The Small Industries Service Institutes and the Extension Centres are now training managerial, supervisory and extension personnel for small business. Their training courses will be expanded to reach about 17,000 men, the number small business is now estimated to need.

Training of Teachers for Technical Institutions

Shortage of teachers is a constant problem in technical institutions at this stage. For instance, in engineering colleges and polytechnics, over one-fourth of all teaching posts are unfilled. Incentive programmes started in the Second Plan—of fellowships in selected engineering colleges, and of foreign studentships for graduates who return to teaching posts—will continue in the Third Plan. Higher salary scales have been recommended by the All-India Council for Technical Education and will be put in effect to attract more students to teaching. Post-graduate courses in engineering and technology have been introduced in 34 institutions to prepare students for teaching positions.

Instructors for skilled workers and craftsmen are also in short supply. About 8500 will be needed over the Third Plan. To meet this shortage India will double the capacity of the present four Central training institutions and set up three additional institutes.

Scientific Personnel

For the national laboratories, industries and other institutions, scientists with post-graduate degrees are demanded in increasing number. There is also shortage of science teachers in secondary schools, in science departments of colleges and universities. The colleges alone will need 17,000 more science teachers over the next five years. To meet these needs, science facilities are to be increased in colleges and universities, so that out of the 1.3 million students in (non-technical) colleges by 1966, over 500,000 will be taking up science.

A Scientists' Pool was set up in 1958 for immediate placement of well-qualified Indian scientists and technologists returning from studies abroad.

Agriculture and Rural Development Personnel

Prior to Independence, relatively few students took agricultural training. Since then, because of the needs of the

community development and agricultural programmes, the number has gone up very sharply. The number of agricultural colleges has more than doubled over the decade 1951-61, to a total of 53. These colleges are now able to take well over four times as many students, about 4600 a year. The high requirements for agricultural graduates during the Third Plan period, estimated at 20,000 more than today, are therefore expected to be met. Over the Fourth Plan, India will need another 30,000 agricultural graduates, and four new agricultural colleges are being set up to help provide them.

Post-graduate training in agriculture, begun for the first time during the Second Plan, will be made available in five colleges to help provide more teachers and highly trained personnel. India's relatively few institutions teaching veterinary science, dairying, forestry, fisheries and soil conservation will also be expanded and some post-graduate departments established.

Until very recently agricultural colleges have been separate from colleges teaching veterinary science, dairying and basic science and humanities, and only a few of them have been linked up with research and field extension work concentrated on actual village problems. While extension work is being gradually introduced in agricultural colleges, India's first agricultural university bringing together all these studies was started only a little over a year ago. It has been strongly recommended that more such universities are opened to bring teaching, research and extension work together in an integrated course, specifically concerned with and serving the needs of villages in the surrounding area.

To staff the community development programme, a wide variety of training institutions have been set up for many different kinds and levels of personnel. About 50,000 men and women will be needed for the community development programme which by October, 1963, is to cover all rural India. There are at present about 96 centres for training

village level workers. Home economics extension training for women village workers was started in 1955, and there are now 43 centres for such training; 26 more will be set up over the next five years. To man rural cooperatives, training programmes for different grades of personnel will be much expanded during the Third Plan, especially in fields like marketing and land mortgage banking.

School Teachers and Other Social Service Workers

Since India is introducing compulsory primary education over the Third Plan, there is a tremendous need for school teachers for primary schools, middle schools and beyond*. About 360,000 teachers are needed for primary schools alone, and 27,000 for colleges. Teacher training has been given a very high priority in the Third Plan. By the end of the Third Plan, about three-fourths of all primary and middle school teachers will have had training, as compared to only about two-thirds today.

Shortage of health personnel, particularly of auxiliary health workers, is seriously holding back the expansion and effectiveness of new health services. India, for example, needs 39,000 more nurses than it now has, and some 40,000 more nurse-midwives. Nearly 200 new training institutions will be set up to train at least a large share of them during the Third Plan, although shortages will continue to be severe. India also needs 6000 more pharmacists and over 13,000 more sanitary inspectors, and some additional training schools are being established. By 1966, India will also have 75 medical colleges (as compared with 30 in 1951) and will be able to turn out 19,000 more doctors during the next five years. The shortage of doctors is felt mainly in the villages where doctors are reluctant to serve.

During the last five years more facilities for training social welfare workers have come into being. These include

*For primary schools 61 per cent more teachers are needed; for middle schools 81 per cent; for secondary schools 40 per cent.

two schools of social work which give a two-year course, and train on an average 400 to 450 men and women a year. There are also special centres for training senior and supervisory personnel for work with tribal people and other backward classes, and for training women for rural welfare and family planning programmes.

Business Management and Administration Personnel

Securing highly trained managerial personnel is, as we have seen, a matter of the greatest urgency both for government and for private business. A National Academy of Administration and Directorate of Training have been set up at Mussoorie offering a combined course of training for the higher grades of the civil service. An Administrative Staff College was opened a few years ago at Hyderabad, which gives special courses for industrial and government administrators. The government has also organized an Industrial Management Pool from which the government and government-owned enterprises can draw managerial personnel.

During the Second Plan courses of business administration and management were started at seven institutions, two of which also provide education in industrial and production engineering. More such courses will start during the Third Plan. Two All-India Institutes of Management, one in Calcutta, one in Ahmedabad, are being opened shortly in co-operation with the State Governments and industries. A separate National Institute for Training and Industrial Engineering will also be set up in collaboration with the National Productivity Council. New training facilities have also been set up for training statisticians, who are required in increasing numbers in government, private industries and the universities.

The need for trained men and women is a continuing and acute one. The progress India has already made is significant, and the education system is each year becoming more and more closely attuned to realistic manpower needs. But

many gaps remain, many new proposals remain to be tried. The work of equipping India's millions of young people for specific and useful service to their country and using their skills to the full is one of the great tasks of India today and in the future.

THE DEVELOPMENT PROGRAMMES

Third Five Year Plan, 1961-1966

KEY TARGETS

FOR AGRICULTURE AND RURAL DEVELOPMENT

—A 30% rise in agricultural production

—A 32% rise in foodgrain production alone, to 100 million tons a year by 1966

—All of village India—over 360 million people—covered by a farm extension community development programme

—A key district in every State put under an intensive food production programme

—Every village assured of safe drinking water, schooling facilities and an approach road

—Nation-wide rural medical facilities providing at least one health centre for every 60—70,000 villagers

—20 million more acres under irrigation, to a total of 90 million acres, more than half of all India's irrigable lands

—At least a four-fold increase in use of fertilizers

—About two-thirds of all villagers organized into farm credit cooperatives, and about $1400 million made available for farm loans

—Veterinary facilities in every rural development block, and eradication of rinderpest, the leading cattle-killing disease

—Planting of industrially important fast-growing timber on 300,000 acres of forest lands, teak on 210,000 acres; another half million acres planted to firewood and other species

—Soil conservation measures to cover 11 million acres

—A rural public works programme using up to 2½ million rural workers by 1966, improve irrigation and soil conservation

—About 5 million acres of land distributed to 700,000 landless rural families

CHAPTER IX

AGRICULTURE AND RURAL DEVELOPMENT

1. *STEPPING UP FARM PRODUCTION*

AGRICULTURE has the highest priority of all India's plans for development, today and over the future. As we have already seen, the reasons for a sharp step-up in farm production are urgent and compelling.

India's farm yields, even today, in spite of considerable improvement over the last ten years, still average among the lowest in the world. As a result, India is not yet able to feed its large and growing population, and farm incomes are among the lowest not only in India, but among the nations of the world.

Imports of large quantities of food (these imports have recently averaged over 3 million tons a year) have prevented acute food shortages but they have been a serious drain on India's scanty resources of foreign exchange, even with generous foreign aid. To feed India's fast-rising population without even larger imports or serious food shortages and inflation, India must, as rapidly as possible, raise enough foodgrains to be self-sufficient.

Further, farm products—from tea, jute and spices to hides and skins—make up the bulk of India's exports earning foreign exchange. Farm production must be pushed high enough not only to meet local needs but to yield plenty for exports.

Looking at the problem from a long-run view, moreover, farm production as a whole, it will be remembered, makes up roughly half of India's total production and income. Higher production on Indian farms thus is the key to any rise in national income and to the development of the country as a whole. Specifically, India's effort to reach a national growth rate of over 5 per cent a year over the Third Plan

depends directly on reaching the high targets set for farm production.

Further, farm production has to go up as fast and as far as possible so that, as the rural population rises, the incomes and living standards of India's 74 million village families can also go up and keep pace with those in towns and cities. Since four out of five of India's people live in rural areas, this is a very important problem from the point of view of social justice and equality.

Both in city and village, moreover, food and cotton cloth, as we have seen, make up over two-thirds of all expenditures for the great majority of India's families. To produce enough food and cotton is, therefore, essential to improve—even to keep up—present living standards for the country as a whole as well as to hold prices steady on these basic necessities of life.

Third Plan Targets

While improving farm production as a whole is the key to India's balanced and speedy growth over the long run, the Third Plan has set two specific top priority goals to be reached in the next five years. The first is to produce enough foodgrains to be self-sufficient; the second is to produce enough commercial crops to meet the needs of exports and industry.

With these urgent goals in mind, the Third Plan has set a target of stepping up agricultural production as a whole by over 30 per cent, or by about 6 per cent a year. Roughly this means that production will have to increase nearly twice as fast as it has in the past ten years. Foodgrain production is to be stepped up by about 32 per cent, to 100 million tons.

The Third Plan targets for specific crops are shown in the table at page 172. These targets have been set on the basis of detailed study of agricultural programmes of the States. The table also shows the substantial rise in farm production

over the past ten years, in spite of some year-to-year fluctuations.

The Third Plan targets are high, but they must be met. The target of 100 million tons of foodgrains a year will represent self-sufficiency. It will also permit the 492 million people (the population now expected by 1966) to have a somewhat better diet than the present, and allow some grain for seed, feed and storage. Today, even with food imports, the amount of foodgrains available per person per day is only 16 oz.* With the lack of other types of foods, there is a real need to improve diets. What is more, with the expected rise in incomes, there will certainly be increased demand for foodgrains, as well as other non-cereal foods. The new production target will permit 17½ oz of cereals per day to be available per person by 1966.

Targets for other crops have also necessarily to be set high. Larger supplies of certain commercial crops such as sugarcane, oilseeds, cotton and jute are essential if the mills which process or depend on these commodities are to achieve their production targets, and if exports of these products are to be stepped up to earn foreign exchange. Production of raw cotton, it will be recalled, fell short of demand over the last few years and imports have been required to keep cotton mills in operation and clothing prices stable. The Third Plan puts special emphasis on stepping up cotton yields. Production of oilseeds, both to supply domestic needs for cooking oils and to increase exports, is one of the critical targets of the Third Plan. With an eye on exports, India also hopes to improve its varieties of jute and tobacco as well as to increase yields of these valuable export commodities. The Third Plan allocates special funds to stimulate production of all such commercial crops.

There has been a marked tendency during the Second Plan years for prices of non-cereal foods—such as fish, milk,

*Foodgrains—wheat, rice, and various types of beans and millets—make up about three-fourths of the calorie content of the Indian diet.

PROGRESS IN AGRICULTURAL PRODUCTION, WITH THIRD PLAN TARGETS

		The First Decade 1950-51 to 1960-61								The Third Plan	
		1950-51	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61 Expected	% increase 1960-61 over 1950-51	Target for 1965-66	% increase 1965-66 over 1960-61
Rice	million tons	20·9	27·1	28·6	24·9	30·4	29·3	32	53	45	41
Wheat	million tons	6·6	8·6	9·3	7·7	9·8	9·7	10	51	15	50
All cereals	million tons	43·7	54·9	57·4	53	62·6	60·5	64	46	83	30
Pulses	million tons	8·5	10·9	11·4	9·5	12·9	11·2	12	41	17	42
Foodgrains (cereals and pulses)	million tons	52·2	65·8	68·8	62·5	75·5	71·7	76	46	100	32
Oilseeds	million tons	5·1	5·6	6·3	6·1	6·9	6·4	7·1	39	9·8	38
Sugarcane (gur) ..	million tons	5·6	6	6·8	6·9	7·1	7·6	8	43	10	25
Cotton	million bales	2·9	4	4·7	4·7	4·7	3·8	5·1	76	7	37
Jute*	million bales	3·3	4·2	4·3	4·1	5·2	4·6	4	21	6·2	55
All commodities (index of production)	1949-50=100	**95·6**	**116·8**	**124**	**114·6**	**132·3**	**127·2**	**135**	**41**	**176**	**30**

*Excluding mesta which may provide 1·3 million bales in 1965-66.

eggs, fruits and vegetables, ghee (clarified butter) and edible oils—to rise more rapidly than the price of foodgrains. The growth in population, the higher incomes which bring about a shift from a heavy cereal diet, and the comparatively slower rise in the production of these non-cereal foods, are responsible for these rising prices. Along with foodgrains, equal stress, therefore, is to be placed on Third Plan production of non-cereal foods, particularly such foods as fish and dairy products.

The new targets call for substantial increases in India's crop yields per acre. The increases expected are as high as 27 per cent per acre for rice, 20 per cent for wheat, 16 per cent for jute, 14 per cent for cotton.* The greater part of these increased yields will necessarily have to come from areas with irrigation and assured rainfall, although in other areas improved soil conservation methods and dry farming techniques should result in some improvement in yields. "Double cropping"—possible only in irrigated lands—will also be an important factor in increasing total agricultural production. It is expected that 67 million acres, or about a fifth of all cultivated land, will be sown to more than one crop by 1966. Further, about 7 million more acres of waste land will be reclaimed and brought under cultivation.

It is clear, however, that the high Third Plan targets can be reached only if all agricultural development programmes of the Third Plan are carried out speedily and in full and only if there is widespread public participation and adoption of improved farm practices as well as the utmost use of rural manpower. This will call for a tremendous and coordinated effort not only of the agriculture departments in the States and Central Government and all agencies and programmes concerned in any way with India's rural people, but of the people themselves. It is in agriculture more than perhaps in

*For example, it is expected to get an average of 1029 lb of rice per acre instead of the present 807; 795 lb of wheat instead of 662; 108 lb of cotton compared to 95. U.S. yields for these crops are today 3411 lb for rice; 1554 lb for wheat; 448 lb for cotton.

any other aspect of India's economy, where India and its people face their greatest challenge in changing from traditional ways to modern methods based on science and technology.

Problems of Increasing Agricultural Production

Certainly the problems of increasing farm production in India are many and complex. During the First and Second Plan periods, important steps were taken to tackle these problems on a broad front, and to create favourable conditions for a more productive agriculture. Fulfilling the Third Plan targets will require far more intensive efforts, and all programmes—those already underway and new ones to be started—will have to be carried out with far more effective organization and administration. The farmer in the field, his needs and his problems, must be the focus of all development programmes.

Looking at the problems as a whole, development of India's agriculture must take place on many fronts at once. One of the most urgent steps is not only to expand irrigation for relieving dependence on the unreliable monsoon rains but to stimulate the maximum and most economical use of irrigation waters. Another is to expand India's farm extension and community development agency, which now reaches slightly more than half of all rural people, to cover the entire nation and reach all farmers with a concentrated educational effort on improving farm practices and farm yields. Another essential line of action is to bring, within a bullock cart's hauling distance of every village, the fertilizers, seeds, implements and other farm supplies essential to improving crop yields. Farm credit must similarly be made readily available to all farmers.

Land reforms must also be completed swiftly so that both tenants and landowners are free from uncertainty and can concentrate on farm improvement and increased yields. Making maximum use of rural manpower—to build and

maintain irrigation works, do contour bunding and other soil conservation work—is another essential programme to strengthen the rural economy and assure higher yields. Further, a concentrated attack must be made in selected districts in the States which, because of irrigation and assured rainfall, have the highest potential for increased production. All of the programmes will take the utmost efficiency in organization and administration and public support.

The Cost of Agricultural Development

Stimulating farm production to reach the high targets set, will require considerable expenditure in funds as well as effort. But achieving the targets has so high a priority in India's development plans that no shortage of funds will be allowed to stand in the way of reaching farm targets. Substantial funds have already been made available. The Third Plan provides a total of nearly $2690 million (Rs. 1281 crores) for all agricultural and rural development programmes*—about double the amount of the Second Plan. In addition a substantially increased amount is being allocated for farm credit—enough to reach a level by the last year of the Plan of about $1113 million (Rs. 530 crores) for short and medium-term loans and $315 million (Rs. 150 crores) for long-term loans disbursed largely through local farm cooperatives.

*This amount will be divided among various agricultural programmes as follows :

	$million	Rs. crores
1. Irrigation :		
minor	371·3	176·8
major and medium	1258·5	599·3
2. Agricultural production	474·8	226·1
3. Community development—agricultural programmes	264·6	126
4. Cooperation	168·2	80·1
5. Soil conservation	152·7	72·7
Total	$ 2690·1 million	Rs. 1281 crores

Taking these funds all together, the total amount to be made available for stimulating agricultural and rural development is considerably larger than at any time in the past. If necessary, during the course of the Plan, additional funds will be provided. Thus the crucial factor in achieving Plan targets will not be any shortage of funds but the quality of technical support, administrative efficiency and organization, and the speed with which necessary supplies can be produced and distributed and all farmers educated and stimulated to use new methods. Price policy, especially in relation to commercial crops, will be another factor of special importance.

Programmes of Technical Support to Agricultural Production

The principal "technical" programmes designed for reaching higher Third Plan targets are irrigation, soil conservation, dry farming and land reclamation, supply of fertilizers and improved seeds, and better ploughs and improved implements. Intensive work has to be organized on each of these programmes over the country as a whole. In addition, in 15 selected districts where conditions as to rainfall and irrigation are especially favourable, these programmes will be taken up in an intensive production drive.

1. *Irrigation* : From large and medium irrigation projects and from minor irrigation works, the (net) irrigated area of the country is expected to increase by about 20 million acres to a total of 90 million acres by 1966. Expansion of irrigation on this scale, which could be further stepped up if rural manpower programmes are carried out, will make possible considerable double-cropping and thus increases in yields. Minor irrigation works—such as wells, "tanks" (local reservoirs)—will be strongly emphasized and are expected to irrigate as many acres as the larger irrigation projects. Details of these irrigation programmes are given in later pages.

An urgent problem is to step up actual *use* of irrigation by farmers. In some parts of the country where dry farming

has been traditional, irrigation provided by various new projects and even by tanks and tube-wells has not been used speedily enough. Advance planning of field irrigation channels and intensive education of farmers in "wet" farming and double-cropping techniques are essential. India will also do considerable research into the most effective and economical methods of irrigating crops.

2. *Soil conservation, dry farming and land reclamation* : In the unirrigated areas, the efforts made so far to stimulate production are generally inadequate. Soil conservation is one of the main developments to be carried out, and the need and scope for it are large. The Third Plan emphasizes large-scale soil conservation and dry farming to be undertaken through local participation by all agencies working at the village level, and mass participation by the communities concerned, as well as by State Governments. Third Plan targets include : soil conservation to cover 11 million acres; dry farming practices to cover 22 million acres; land reclamation to cover about 3·6 million acres. A large corps of trained soil conservationists is needed to help reach these targets and training programmes are being started.

3. *Fertilizers* : India's production and use of chemical fertilizers are far lower than in most countries seeking big yields per acre. By the end of the Third Plan, India intends to increase the use of nitrogenous fertilizers over four-fold, from about 230,000 tons, the rate in early 1961, to about 1 million tons*; that of phosphatic fertilizers about six-fold, from about 70,000 tons to about 400,000**; and that of potassic fertilizers about eight-fold, from 25,000 tons to 200,000***. The target of the additional area to benefit from green manures is about 41 million acres.

Demand for fertilizers has been increasing and already outruns supply. To meet the needs over the Third Plan, India

*In terms of nitrogen.
**In terms of P_2O_5.
***In terms of K_2O.

will step up domestic production of fertilizers sharply—although in the early years it will have to rely heavily on imports. Much of the new production will be in the form of compound and/or complex fertilizers which provide more balanced plant food.

Although more farmers are using fertilizers today, it will be a considerable job to organize distribution of fertilizer supplies on the scale proposed and necessary over the Third Plan, and to educate still more farmers to use them on varied crops and soils. A central fertilizer marketing organization will be set up during the Plan. Soil testing facilities to determine the right use of fertilizer are also being developed.

4. *Better ploughs and improved agricultural implements*: Little progress has been made so far in getting India's traditional farmers to use improved agricultural implements. Despite frequent consideration of the subject at the expert level, practical action has invariably lagged behind.

As a result of discussions over the past year, a detailed development programme for agricultural implements is now being prepared as an essential feature of the Third Plan. It will include : (1) arrangements for adequate supply of iron and steel to manufacturers; (2) selection of the improved implements to be popularized; (3) establishment in every State of one centre for testing, design, research and technical guidance and, where necessary, for manufacturing implements of improved types; (4) training of village level workers and village artisans in the repair and manufacture of improved implements; (5) credit arrangements to encourage purchase of new implements; (6) demonstration and popularization of improved types by extension workers in the community development blocks; and (7) strengthening of agricultural engineering personnel in the States.

5. *Seed multiplication* : A comprehensive programme for setting up local seed farms for producing foundation seed of improved varieties was started in the Second Plan. Generally

speaking, a seed farm (each including a seed store) of 25 acres or more was located in every community development block. By early 1961, 4000 seed farms had been set up; about 55 million acres of food crops are now covered with improved seeds. During the Third Plan 800 more will be set up and an additional seed store for every development block, making it possible to put about 150 million more acres under improved seed.

Cultivation of hybrid corn (maize), on which pilot experiments have now been done, will be introduced on a nation-wide scale for the first time during the Third Plan. About a fourth of all corn-growing areas will use hybrid seed by 1966.

6. *Plant protection* : Pest and disease control agencies now operating in some of the States will be strengthened during the Third Plan. Hand-operated dusters and sprayers also need to be supplied. Coverage of about 50 million acres is the Third Plan target for plant protection.

7. *Farm prices* : If Indian farmers are to step up production, they must have full confidence that their crops will bring a good enough price to pay for the effort and investment expended. Over the past, fluctuating prices on certain farm products have clearly affected production. Jute prices, for example, fell in 1958 and production dropped in the following years. To stimulate production India will assure minimum prices for important foodgrains and commercial crops such as cotton, oilseeds and jute. The aim is to set prices well in advance of the sowing season, relate the prices to India's production needs, and avoid too great a spread between floor and ceiling prices.

Storage facilities to ease movement of grains and help stabilize prices are essential. National grain storage capacity is to be increased from 2.5 to 5 million tons. In the villages, many small storage facilities—to hold in all about 2 million tons of grain—will be set up.

Working at the Village Level

In the end, it is only in the villages and in farmer's fields where the new and bigger crops will be produced. The real problem then is to organize all efforts and services down to the village and farm level.

To get the highest possible production, it is now realized that there should be a farm production plan not only for each individual farm but for each village as a whole. Many villages in India have only as much land under cultivation as a single good-sized farm in the U.S. The village plan should include full use of irrigation, arrangements for providing improved seed and organic and green manures, and for distribution of fertilizers. The village *panchayat* and the local cooperative, with the help of the national extension (community development) services must help each village and each family develop these production plans. They must also organize efficiently at the village level, the supplies, services, farm management advice and technical assistance needed by the farmers, and see that there is farm credit available for each family to buy the seeds and fertilizers needed to make the plans work. Although only selected families may try farm planning at first, eventually every single farm family must be drawn in.

Intensive Agricultural District Programme

As in most other countries, there are in India certain areas where, largely on account of the availability of irrigation and assured rainfall, growing conditions are especially favourable. These areas now produce a very large share of the nation's supply of foodgrains, especially of wheat and rice. An intensive drive to increase production in some of these promising "bread-basket" areas has already been started, and will be strongly emphasized over the Third Plan. To begin with, one district has been selected in each State. In these districts a concentrated effort will be made to organize village and farm production plans which will involve all agricultural

families, and to provide the agricultural supplies, credit and technical assistance essential to an intensive production effort.

The programme will emphasize and encourage farmers to use not one but all of the improved farming methods known to be valuable in increasing food production, especially irrigation techniques, improved seeds and farm implements and adequate fertilizers and pesticides. Liberal farm credit is being provided so that farmers can afford to adopt the necessary improvements.

The Intensive Agricultural District Programme, as the project is called, includes additional farm extension staff at the district, block and village level. The additional block level staff includes specialists trained in crop improvement, farm management, soils and fertility, plant protection and water use. In the villages additional village level workers are being added so that more intensive effort can be made with individual cultivators to develop farm plans and introduce better methods of cultivation and farm management.

2. *COMMUNITY DEVELOPMENT*

Since it began eight years ago, India's nation-wide farm extension and community development programme—the largest of its kind in the world—has been started in over 3100 development "blocks" of some 100 villages each. It now reaches about 370,000 villages, or over half of all the village people in India; by October 1963 it will cover the entire country.

The movement is intended to be the spearhead of development and advance for India's rural millions. Every "block" is selected as an area of intensive development in which all agencies of the Government work together as a team, in collaboration with the village leaders represented in village, block and district councils, and with local cooperatives. In each block there is a team of farm extension officers and from 10 to 12 trained village level extension workers who

live and work directly in the villages. The movement seeks to reach every family in each village and encourage the entire community to join in mutual efforts for self-improvement.

Over the past five years several important changes have taken place in the character of the community development movement. Its activities in the villages have now been fully merged with the farm extension service, and more and more the development "block" of 100 villages is being considered as an administrative and planning unit for each area in an integrated programme with the district.

Perhaps the most significant change is the placing of far greater responsibility for local development directly on locally elected councils of villagers at the district, block and village levels and the broadening of the concept of rural extension to include the stimulation and use of these democratic bodies for planning and carrying out development programmes.

The Third Plan provides $617 million (Rs. 294 crores) for community development, and $59 million (Rs. 28 crores) for *panchayats* (elected village councils). Many special studies made of the programme, as well as continual evaluation of how it has worked out, have thrown useful light on the direction this nation-wide programme should take over the Third Plan and future years to contribute most to the rural people and the nation.

Concentration on Agriculture

The community development movement was conceived from the beginning as one touching on all aspects of rural life. The growth of agricultural production is of such critical importance, and so basic to the solution of other rural problems, that the principal test today for the community development movement is its real effectiveness as an agricultural extension agency. It is strongly felt that the community development organization must over these next years take all steps necessary to concentrate on and strengthen its

agricultural extension work and to accept responsibility for achieving the targets of agricultural production, on the basis of the widest possible participation by local communities.

The village level extension workers are expected to devote most of their time and energy to agriculture and cooperatives and to strengthening village participation and *panchayats*. At the same time, State Agriculture Departments have to assure that the supplies, trained manpower and other resources needed are actually available in the villages.

Development of Village Production Plans

Many villages, as just noted, have only as much land under cultivation as a good-sized single farm in the U.S., and there is much to be gained in developing a coordinated plan of farm improvement for the village as a whole as well as for the small individual farms. The community development and farm extension agency has a key role to play in preparing village production plans to increase crop yields. Without such a village plan it will not be possible for the extension workers to reach all the farmers in the village or to get their full participation in adopting new farming methods and implements.

The proposal to draw up village plans was made a few years ago, but so far they have not become a common method of working towards farm improvement. To make a plan effective involves supply of credit, fertilizers, improved seeds, assistance for plant protection, minor irrigation, etc., for all participating farmers. It also means that the entire community or groups of cultivators should join in such work as the digging of field irrigation channels and village tanks, contour bunding, planting village fuel-wood trees, etc. For guiding this work technical assistance will be necessary.

To prepare village plans well, and get popular support in drawing them up and carrying them out, and to provide the necessary farm supplies, credit and technical assistance in an efficient organized way, is by far the most important task of the extension service over the Third Plan.

The "Block" as a Unit for Planning and Development

Drawing up plans for each community development "block" (roughly 100 villages) has become increasingly important as India tries to make a greater impact on living standards and employment in rural areas. Block plans can be a valuable means of discovering what the needs of each block area are, what funds, technical assistance and local cooperation are required to meet them, and how the various development programmes agreed upon for the block can be carried out. They are also important to coordinate all the special programmes and funds from various departments (such as welfare funds) in addition to the community development funds, now designed to reach the blocks and villages, and to stimulate and coordinate rural public works programmes for each area.

Block plans should include proposals for developing, on a block-wide basis, farm cooperatives, village industries, elementary education (especially school buildings to be built with local help), safe drinking water supplies and roads, as well as public work programmes for local manpower. Most of the work to be done under the block plans requires strong extension support and technical assistance. This re-emphasizes the need of the community development programme to concentrate on extension work, with the support and guidance of district specialists and the popularly elected bodies at district, block and village levels.

"Panchayati Raj" and Community Development

In early 1958, as a result of many studies of the community development programme, it was agreed that the administration of community development should be "decentralized" and democratized in order to enlist more active and direct participation of the village people. Under this new proposal, responsibility for development work in the villages is placed on a three-tiered system of elected local bodies—the *panchayats* or village councils at the village level, a *panchayat*

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सरकारी खाद, बीज
पैसा एवं शिक्षा के

Just as each village is to have a Panchayat, it is also to have a co-operative providing credit, fertilizers, seed, marketing services and technical advice. A farmer is seen getting his supply of superior grain.

Special efforts are being made to provide three basic amenities to each village—drinking water, a road linking it to the nearest highway or railway station and a school building. *Above :* **Collecting water in shining brass pots are housewives of a village in the Rohtak district, Punjab.**

More of India's 56,000 villages now have paved streets, drainage, school buildings and playgrounds. Seen above is a street in Dulley, a village in the Ludhiana district of the Punjab.

One of the most far-reaching developments in Independent India is Panchayati Raj, under which elected councils of villagers are invested with large powers for the administration of the villages. Residents of a village in Rajasthan are seen discussing the problems of their village.

samiti at block level made up usually of the elected heads of the village *panchayats,* and a *zila parishad* at the district level made up of the elected heads of all the block *samitis* in the district. The system is called *Panchayati Raj* or "rule of the *panchayats*" and constitutes a far-reaching change in the structure of local administration and rural development in India. Its chief purpose is to involve all the people in the rural areas to work for their own development.

The exact form of *Panchayati Raj* is determined by each State. Seven States have already enacted legislation for establishing such democratic elected bodies at the district and block level, in addition to the *panchayats* in the villages. Other States are considering similar legislation.

Panchayati Raj has considerable significance for community development. Its great potentialities lie in the fact that, under the guidance and supervision of the State Governments, the final responsibility for carrying out rural development will fall more and more on the people themselves through their elected local representatives. One of the principal tasks over the next five years is to assure that *Panchayati Raj* institutions grow and work in such a way that they produce the fastest and fullest development of their area and its people.

Panchayats, councils of village elders, are an old institution in India, but popularly elected bodies charged with the job of developing their villages, for the benefit of all groups in the village, are a relatively new concept. The new system, begun in a few States only two years ago, has not been working long enough as yet for a thorough appraisal. There are, however, certain problems that may arise and will need to be met.

One conclusion already reached, for instance, is that the greatest stress and attention must be put on the village *panchayats* and town meetings (*gram sabhas*) of the entire village population, at the same time that the block level and district bodies are being evolved. It is at the village level where people's cooperation and participation are most needed

and can contribute most. Another point of concern is the relationship between popular officials and extension officers and block staff. Here a new tradition has to grow up, one that preserves the values of democracy as well as the effectiveness of official technical help and guidance. To make the relationship most fruitful, the functions and powers of each of the democratic bodies and its elected officers, as well as the executive and extension duties of the block and district technical staff, should be clearly defined, so that there will be no confusion of duties or lines of responsibility between elected officials and technical men, and so that the technical help and experience of district officers are used to the full.

The chief responsibility of the locally elected *panchayat* and *samiti* leaders should be to stimulate popular participation in development programmes, encourage and assist cooperatives and *panchayats* in their work, and help organize programmes beneficial to the village as a whole, especially those using rural manpower. The main emphasis should be on increasing crop yields through village and block production plans and getting local people to participate in these plans.

Panchayat samitis and *panchayats* and the community development programme as a whole must also today give special attention to raising the living standards and opportunities of the less privileged groups in the villages while stimulating the development of the rural area as a whole. This is a problem of particular importance in rural India where inequalities of the past—in land-ownership. wealth and social status—persist.

3. *DEVELOPMENT OF RURAL COOPERATIVES*

While India hopes to strengthen the cooperative movement throughout its economy, cooperation is felt to be particularly important in the rural areas, to raise farm production, expand rural employment and assure all members of a village of their basic needs. India hopes, therefore, to build up village

cooperatives which will form an integral part of a progressive rural economy and which will increasingly take over the functions of production, marketing, processing and distribution.

As India sees it, and under a policy agreed upon by the National Development Council, responsibility and initiative for the social and economic development of the village rests equally on the village cooperative and the village *panchayat*. Programmes for development of rural cooperatives over the Third Plan have been worked out in terms of this policy.

One of the key proposals is that the primary functions of the village cooperative are to provide short and medium-term credit, to supply agricultural and other production requirements such as fertilizers, improved seeds and implements, and to handle the marketing of farm produce. Granting of farm credit is to be linked closely with programmes for increasing farm production so that each farm family should be able to secure the necessary credit for obtaining supplies of fertilizers, improved seeds and implements, etc. The Third Plan has provided $168 million (Rs. 80 crores), about twice as much as the Second Plan, for development of cooperatives of all types.

Cooperative Credit

The number of rural cooperative societies, their membership and the total amount of credit advanced have increased very rapidly over the past ten years. By April, 1961, the end of the Second Plan, there were about 210,000 primary agricultural societies (more than double the number of ten years earlier) with total membership of about 17 million (over four times more). About $420 million (Rs. 200 crores) of credit, over eight times the average of ten years ago, has been advanced. In all, cooperatives are now serving about a fourth of agricultural families. Progress as between States has, however, not been even. Further, in a number of States, the overdues in the primary societies are high and some of the cooperatives are weak or inactive.

The Third Plan targets are to strengthen existing societies and increase the total number so that they may include a membership of 37 million, or about 60 per cent of all farm families. The farm credit advanced by the societies will be more than tripled, to about $1113 million (Rs. 530 crores) of short and medium-term loans, and $315 million (Rs. 150 crores) of long-term loans (loans outstanding).

It has been agreed that, as a general rule, primary co-operatives should be organized to serve a single village. However, a cooperative must be economically viable, that is, big enough to meet its own expenses without reliance on government assistance except for a limited period.

Where villages are too small to form a viable cooperative, it is hoped that nearby villages will join to form a single cooperative. But in doing so, the society should retain the essential characteristics of cooperation—voluntary membership, close contact, social cohesion and mutual obligation. With this end in view, the maximum population to be served by a society has been set at about 3000 people (about 500 farm families), with the villages served by a society no more than three or four miles from the headquarters village.

A very important concern today is to assure that the village cooperatives pursue liberal credit policies, so that even very small marginal farmers and landless tenants may get credit to buy fertilizers, improved seeds and adopt better farm practices. Such small farmers and tenants have not previously been considered "credit-worthy".

In order to provide additional borrowing power to the cooperatives and enable them to follow a liberal credit policy, some government participation in the share capital, for a period of five to eight years, will be made available to each cooperative if three-fifths of its members so desire. Normally the government contribution will be given indirectly through apex and central banks.

A significant new proposal is that outright government grants will be made to provide a special "bad debt reserve".

which will induce cooperatives to advance loans to the marginal farmers and landless tenants who need credit if they are to step up crop yields. These grants will be given to primary cooperatives and central banks for covering any losses on these loans. Continuation of the grants will depend on whether farmers who were once unable to get credit do in fact receive the necessary help.

The Reserve Bank of India has played an important part in building up the cooperative movement over the last ten years, through supervising financial institutions, making loans to States and cooperative banks. To provide more funds for long-term loans, an Agricultural Development Finance Corporation is being considered by the Reserve Bank, in consultation with the government. The loans would be available for long-term farm improvement which can raise production.

Cooperative Marketing

Marketing cooperatives have an important part to play in helping farmers sell their produce at a favourable price, and also to provide them with basic farm supplies. By early 1961, there were about 1870 cooperative marketing societies already established, most of which have their own storage facilities. The volume of business they handle, however, is still relatively small. The main effort in the Third Plan is to place these marketing societies on a sound basis, and to set up societies in areas not as yet provided with cooperative marketing facilities. About 600 additional marketing societies and nearly 1000 more storage warehouses will be set up. About 4100 smaller grain storage godowns have already been set up in rural areas on a cooperative basis and another 9200 will be put up during the Third Plan.

Cooperative Processing Units

There was considerable growth in cooperative processing, especially in the sugar industry, cotton ginning and pressing over the last five years. By early 1961, there were 30

cooperative sugar factories producing about half a million tons. Eleven more factories are already licensed and are being set up. For the Third Plan, the target is 25 new sugar cooperatives. A good start has been made on other types of cooperative processing units—for rice, cotton, jute, groundnuts, fruits, etc. There are about 380 of these today and it is hoped that as many as 780 more such units may be set up over the Third Plan. With the rise in farm production there should be considerable scope for such processing plants and more and more of them are to be organized cooperatively.

Consumers' Cooperatives

Consumers' cooperatives had developed successfully in some States during the war and the post-war period under the stimulus of price control and rationing of foodgrains and other essential goods. Where controls were dropped, these cooperatives had a setback. For example, of the 7168 or so primary stores existing in 1959-60, less than a third were operating at a profit. The Third Plan programme tentatively is to assist 2200 primary stores and 50 wholesale stores and strengthen existing stores, but the proposal is under review. There is considerable scope for consumers' cooperatives in the cities. In rural areas distribution of essential supplies can be largely handled by the primary service cooperatives in the villages.

Cooperative Farming

With the growth of population, the shortage of land and the need for a rapid step-up in farm production, India feels it important to intensify efforts to develop cooperative farming on a voluntary basis throughout the country. On the whole, cooperation in farming has to grow out of general rural progress under the community development movement, out of the progress made by rural cooperatives in credit, marketing, supplies and processing, out of the growth of rural industry and the fulfilment of land reforms. Cooperative farming can make a significant contribution only if it

develops as a popular and widespread movement under genuine local leadership.

In the general pattern of organization proposed for co-operative farming, the most important principle, and one nationally agreed upon, is that cooperative farming is a voluntary movement. No question arises of compelling any cultivator to join a cooperative farming society.

The progress of cooperative farming will depend largely on successful local experience gained in different parts of India. For this purpose pilot experiments are being started all over the country and personnel are now being trained to work in these projects. In the first year of the Third Plan, about 65 districts have been selected for pilot experiments throughout India. Eventually it is hoped to start pilot projects in each of India's 320 districts, with an average of about ten cooperative farms per district. These are to be started chiefly in community development "blocks" where the co-operative movement and local leadership have made good headway.

The National Cooperative Farming Advisory Board has been established to promote the growth of cooperative farming. No maximum size of farm has been proposed, although individual States may set certain minimum standards for providing assistance. Members of cooperative farms are expected to pool their land, work it in common and get a return commensurate with the amount of their land and labour contributed. Up to $840 (Rs. 4000) per farm will be given by the State for use as medium and short-term loans, plus other small loans and grants for management needs and certain facilities (grain storage, cattle-sheds, etc.).

Apart from the programme of pilot experiments, no specific target for cooperative farms has yet been laid down. As experience is gained from the pilot projects and from other cooperative farms being undertaken on a voluntary basis, more definite targets will become possible. In addition to such State funds as will be provided for pilot projects in

the States, the Central Government has allotted $13 million (Rs. 6 crores) for assisting other cooperative farming societies and more funds will be made available as progress is made.

Cooperative Training

Successful management and operation of cooperatives of any kind depends to a considerable extent on trained personnel and widespread education of the members in the benefits and responsibility of cooperation. Arrangements have been made during the past years for training some 540 senior personnel, over 3400 intermediate and block level cooperative workers, and 34,000 junior personnel of cooperative institutions and agencies. Special courses have trained 382 men in land mortgage banking and over 1250 in marketing. State and national cooperative organizations have given short-course training at camps organized in the villages, to over 768,000 rural people including local cooperative officials and managers as well as regular members. A cooperative training college, 13 regional institutions and 62 State level institutes are already functioning.

4. *LIVESTOCK, DAIRYING AND FISHERIES*

Improving India's livestock, producing more dairy products and stepping up fishing yields are essential to increase rural incomes and provide more nutritious foods for people in city and village. India hopes to develop more of what it calls "mixed farming"—raising livestock as well as crops—to provide assured year-round farm incomes and make more milk, eggs, fish and meat available. Moreover, wool from Indian sheep and fish from Indian shores are already valuable exports which can be stepped up still further to earn more foreign exchange.

The Third Plan allocates $250 million (Rs. 119 crores) for livestock, dairying and fisheries programmes.

Livestock and Cattle Breeding

A 1956 Census showed that India has 200 million cattle or about a fourth of the total cattle population of the world. 45 million of these cattle are buffaloes used chiefly for milk production and to a certain extent for rice cultivation. Bullock is the main draft animal of India. Bullocks turn irrigation wheels, transport people and goods as well as do almost all agricultural work*.

In its effort to improve India's cattle wealth and yields, India has three main aims : to develop better breeds, especially a "dual-purpose" breed good both for draft purposes as well as milk production; to provide more livestock fodder and feeds; and to control cattle diseases.

The chief programme for better breeding is carried out in what are called "key village" areas where intensive cattle development work is done. The programme includes mass castration of scrub bulls, providing pedigree bulls for natural service, artificial insemination centres and veterinary facilities. The First and Second Plans introduced nearly 300 "key village" projects. There are expected to be 71 more by the end of the Third Plan. Over the Third Plan, to make these key village schemes more effective, the special effort will be to provide more breeding bulls, launch a mass castration programme for the large number of unproductive cattle (at least 20 million in India as a whole) and develop more fodder and feed resources. In addition, the number of veterinary hospitals and dispensaries, now totalling 4000, will be doubled and will be available in all community development blocks.

A nation-wide campaign to eradicate rinderpest, one of the most serious cattle diseases, was started on a pilot basis in 1954. By early 1961, it had reached about 90 million cattle and buffaloes. Another 41 million cattle will be vacci-

*Cattle dung is also second only to coal as the most important fuel in India.

nated during the Third Plan to give complete nation-wide protection.

Other programmes will include improved cattle marketing services, segregation of useless cattle, proper collection and treatment of hides which have a high export value, training and research on breeding.

Dairying and Milk Supply

India has only a small organized dairy industry and is short on all dairy products. This shortage is being increasingly felt as incomes rise and city populations swell.

Over the past ten years and especially during the Second Plan period, India has started sanitary milk supply projects in many cities. There are seven large city "milk schemes" operating today, as well as some pilot projects; 28 more projects are in varying stages of completion. Rural creameries, cheese factories and plants to produce infant food and other milk products were begun, although the shortage of foreign exchange for the necessary machinery delayed the programme as a whole.

During the Third Plan it is proposed to start about 55 more milk supply schemes in cities with a population over 100,000 and in new industrial townships; and to set up about eight more rural creameries, four milk product plants and two cheese factories, in addition to the few begun in the Second Plan.

The dairy programme will be linked with the economy of the surrounding villages and will, it is hoped, help develop "dual-purpose" breeds of cattle as well as replace the present unsatisfactory condition of the milk trade. The system of rural milk production will be linked with urban marketing and organized through cooperatives wherever possible.

Sheep and Wool Development

Next to cattle, sheep are the most important livestock in the country. They number about 39 million and the total

production of wool at present is about 72 million lb per year, mostly of the carpet type. Nearly half of this wool is exported; yet at the same time the country imports about 15 to 17 million lb of finer grade wool. To increase yields and improve the quality of domestic wool, 15 sheep breeding farms and 300 extension centres are being established; 2000 to 2500 superior rams will be supplied to shepherds to upgrade local stock; and improved methods of shearing, grading and other improved practices are being demonstrated.

It is expected that by the end of the Third Plan wool production can be raised to about 90 million lb and wool exports reach about $44 million (Rs. 21 crores).

Poultry Development

India has no organized poultry industry, although the demand for eggs and poultry is rising. Poultry development is being stressed as a useful side occupation for rural people to help raise rural incomes and add to the supply of nutritious foods. As a result of the breeding and extension programmes now underway and to be carried on during the Third Plan, it is believed possible to increase average egg production per hen from 60 to 70 a year, and to produce about 65 million table birds a year.

Fisheries

India has abundant potential supplies of fish, from its 3000 miles of coastline, its broad continental shelf, deep sea fishing and a large number of great rivers, bays and gulfs. Considerable development of fisheries has taken place over the last five years, not only to increase fish yields but also to improve the lot of fishermen, who have long been poor, backward and neglected.

Mechanization of fishing craft, developed to replace the crude boats of limited range long used by India's fishermen, has made considerable progress in the States of Maharashtra, Kerala, Mysore and Madras. Mechanization has also been

carried on in Andhra Pradesh and Orissa. About 1800 boats have been mechanized over the First and Second Plans. During the Third Plan, about 4000 more boats will be mechanized. Special emphasis is to be given to exploration of new fishing grounds, cooperative marketing and development of refrigerated rail cars and insulated road trucks.

The production of fish, which was estimated at 1 million tons at the end of the First Plan, is expected to increase to 1.4 million tons by 1960-61 and to 1.8 million tons by 1965-66. Nearly two-thirds of the increased fish catch during the Third Plan is likely to come from marine fisheries. About $25 million (Rs. 12 crores) worth of fish (chiefly shrimps and prawns) is expected to be exported, or double the present amount.

5. *IRRIGATION*

To assure bigger crops and a steady, constant rise in farm production and farm incomes, irrigation is a necessity in India. The only rains are the seasonal monsoons, coming once or twice a year, and these are often undependable. A scanty monsoon can cut in half, or virtually destroy, the chief harvest of the year.

With irrigation, however, not only is the main harvest assured, but in India's warm climate, two and sometimes three good crops a year are possible. The areas with assured irrigation in addition to assured rainfall are those which produce the largest annual yields.

Irrigation has, therefore, been practised for centuries and has been among the most significant fields of development since the beginning of India's First Plan, in helping to rebuild the agricultural economy.

In 1951, the beginning of the First Plan, the area irrigated from all sources was 51.5 million acres—about a sixth of all farm land. By the end of the Second Plan, an estimated 70 million acres was under irrigation.

In the Third Plan irrigation will have an even higher

priority than in the first two Plans. The target is 90 million acres under irrigation—to cover about 50 per cent of the land which is believed to be irrigable eventually. A very sizable part of the targeted increase in farm production over the Third Plan is expected to come from the more widespread use of irrigation together with fertilizers.

India has considerable river water for irrigation, much of it even now unharnessed. By the end of the Third Five Year Plan, it is hoped to use about 36 per cent of the usable flow, or more than double as much as in 1951. There are also considerable ground water supplies available.

One of India's goals is to put a progressively larger and larger part of the irrigated area under permanent first-class irrigation systems. Another is to develop to the full the possibilities of minor* irrigation works—wells and small local reservoirs or "tanks", which can catch and hold the monsoon rains. Another important goal is to speed up the *use* of available irrigation by teaching "wet cultivation" methods to farmers accustomed to dry farming, by encouraging double and even triple cropping, and by constructing field channels more promptly.

What was Done in the First and Second Plans

Over the past decade, the major emphasis was on large and medium* irrigation and multipurpose river valley projects. On completion, these will provide an irrigation potential** of 38 million acres, at a total cost of about $2940 million. Although shortages, especially over the last five years, of foreign exchange, of essential construction materials and equipment, and also of technically trained personnel have

*Irrigation projects costing more than $10·5 million (Rs. 5 crores) are classed as major schemes, and those costing roughly between $ 200,000 and $ 10·5 million as medium schemes. Schemes costing less than $ 200,000 are classed as minor schemes, provided they do not form part of any existing major or medium schemes.

**Irrigation potential is the area which can be irrigated with the water made available at channel outlets.

held back their rapid completion and only half the allotted funds have been spent, these large projects have already provided an irrigation potential of about 13 million acres. Another 14 million acres of potential is expected over the Third Plan as construction on these projects continues.

In addition to these larger irrigation projects, there has been, over the past decade, considerable emphasis on building wells, tanks and other minor irrigation works under the community development and agricultural programmes.

The progress in irrigation, over the last decade—and the progress expected over the Third Plan—is shown here :

PROGRESS IN IRRIGATION

(net area irrigated, in millions of acres)

	1950-51	1955-56	1960-61	1965-66
From major and medium projects ..	22	24·9	31	42·5
From wells, tanks and minor irrigation works	29·5	31·3	39	47·5
TOTAL ..	51·5 million acres	56·2 million acres	70 million acres	90 million acres

PROGRAMMES FOR THE THIRD PLAN

For major and medium irrigation projects including flood control schemes, the Third Plan has allotted $1388 million (Rs. 661 crores). Another $525 million (Rs. 250 crores) will be spent for minor irrigation works under the agriculture and community development programmes. Taking these together, irrigation is thus one of the principal investments to be made over the Third Plan period—claiming a total of Rs. 911 crores*, about $1913 million, or

*The total Third Plan allotment for irrigation is to be spent as follows :

	$million	Rs. crores
Major and medium projects carried over from Second Plan	916	436
New projects	344	164
Flood control, drainage, anti-waterlogging	128	61
Minor irrigation works	525	250
TOTAL ..	$1913 million	Rs. 911 crores

about 9 per cent of the total investment to be made during the Plan.

Apart from minor irrigation, a large part of the amount allocated to major and medium irrigation will go to speeding completion of projects taken up in the First and Second Plans. The target is an irrigation potential of another 14 million acres, which will bring the total to about two-thirds of what can be expected on completion of these projects. Few new large-scale projects are to be started. There will however be a number of new medium sized projects, as well as certain new special projects which have to be undertaken, such as storage schemes on River Beas in the Punjab as a result of the Indus Basin settlement.

Waterlogging in certain parts of the country, particularly in the Punjab, has become serious. To prevent deterioration of irrigated areas, anti-waterlogging measures, such as drains, lining of irrigation channels, pumping of subsoil water to depress the ground-water table, etc., are to be taken up in the Third Plan on an extensive scale. Similarly, anti-sea-erosion measures in certain coastal reaches, such as Kerala, need attention. Fairly sizable funds have been proposed for flood control, drainage and anti-waterlogging programmes to benefit in all about 5 million acres of land; and for anti-sea-erosion works protecting 25 miles of sea coast.

Minor Irrigation

The $525 million (Rs. 250 crores) Third Plan programme for small irrigation works will in itself be one of the larger investment programmes of the Third Plan. The chief advantages of these minor irrigation schemes are that they can be built rather quickly, cost relatively little, and deliver water very soon after construction. They can also be built largely by local individual initiative and by use of local labour and materials. The possibilities of minor irrigation are also increasing with the spread of rural electrification.

Pump irrigation is growing rapidly and has indeed become one of the main uses of electricity.

A widespread programme of small irrigation systems requires, however, considerable study of water resources, administrative organization, and a regularized system of maintenance to prevent deterioration, as well as a corps of technically trained men to develop and improve construction methods and teach the economical use of water and wet farming techniques.

During the Third Plan, efforts will be made to attack these problems. Altogether 8.5 million more acres (net) will be brought under irrigation through minor irrigation works by 1965-66. Eventually over 40 per cent of all of India's potentially irrigable lands are expected to be served by minor irrigation systems; and about 60 per cent by more permanent and assured major or medium irrigation projects.

Stimulating Use of Irrigation Facilities

Use of irrigation waters has been less than expected, partly because of delays in preparing field channels and partly because farmers in a traditional society need intensive education to shift from dry to wet farming methods. Out of the 13 million acres of irrigation potential provided at the end of the Second Plan from major and medium irrigation projects, for example, it is estimated that only about 10 million acres is actually being put to use by farmers. Stimulating use of irrigation is essential and will involve coordinated efforts by a number of government departments, such as Irrigation, Agriculture, Revenue, Community Development, Cooperation, etc., working together with the people at the village level.

With the large projects, the first objective is to synchronize construction of headworks, canals, distributaries, water-courses and field channels so as to ensure that as far as possible the irrigation waters can be passed down to the cultivators' fields about the same time as they become available at the headworks.

Second, to begin education of the farmer, community development "blocks" are being set up over the entire area to be served by an irrigation project as soon as possible after a project has been sanctioned.

Other developmental activities have to be carried out simultaneously. These include soil surveys; preparation of village maps showing proper alignment of field channels to guide the villagers; setting up of experimental farms for determining and evolving new cropping patterns, and for research and demonstration of scientific irrigation practices, particularly of the economical and effective use of water; and advance planning for the supply of improved seeds and fertilizers, credit, etc., required by more intensive "wet" farming.

Similar education and supply programmes and technical guidance as well as careful maintenance systems are necessary to make the most of minor irrigation works as well.

Financial Returns

Irrigation projects constructed in recent years and those under construction at present are much more expensive than those built in the past, partly on account of higher costs of labour and material and partly on account of the more difficult and therefore more expensive means of making water supplies available. For this reason, and also because of the increased cost of maintenance and operation of both old and new projects, irrigation systems do not always yield an adequate return. Most of them are working at a loss.

In addition to stimulating wider use of irrigation, the urgent steps that must be taken for improving financial returns are :

(1) *Revision of water rates and introduction of a compulsory water tax* : Existing water rates in most States are relatively low. While there has been considerable increase in the value of crops produced as a result of irrigation, and maintenance costs have also greatly increased, there has

not been a corresponding increase in the water rates. These therefore need to be revised upward so that, outside of water scarcity areas, irrigation systems do not operate at a loss.

Further, in States where water charges are optional, there is need for a compulsory water tax levied on the entire area for which irrigation facilities are provided, whether water is taken by cultivators or not. This will also help induce cultivators to make use of water and will promote increased crop yields.

(2) *Recovery of a betterment levy* : Legislation for "betterment levy" has already been passed in most of the States. Enforcement presents many administrative problems, and so far only a small proportion of the expected revenues has been collected. Promoting the necessary legislation in the remaining States and enforcing it where it has already been passed are essential steps to be taken in the Third Plan.

Investigation, Research and Technical Personnel

River valley projects require elaborate investigation. To ensure continuity in the development of water resources, the projects and the areas to be benefited by them have to be determined and basic engineering surveys carried out in advance. Special investigation units have already been set up in almost all the States. The Third Plan will enlarge the programme of irrigation research, and also expand training facilities for the large numbers of technical personnel needed for irrigation works, both engineers and agriculture extension specialists trained in irrigation and wet farming techniques.

6. *SOIL CONSERVATION AND FORESTRY*

Soil Conservation

However much irrigation may spread in India, a large area—some 150 million acres or more—will be left on which

increased crop yields have to be obtained mainly through contour bunding, soil conservation and dry farming techniques. The need for soil conservation was emphasized during the First Plan, when it was estimated that as much as a fourth of India's land surface was being eroded by water and wind.

Demonstration of dry farming techniques has been recently started and about 2 million acres of agricultural lands have benefited from soil conservation measures undertaken during the Second Plan. Experiments in certain soils indicate that contour bunding can markedly increase crop yields. With increasing participation from the people the Third Plan will undertake soil conservation with contour bunding over an area of 11 million acres and extend dry farming practices over an area of 22 million acres. For these and other conservation measures, the Third Plan allots $151 million (Rs. 72 crores) as compared with $38 million in the Second Plan and only $3.4 million in the First.

River valleys: Reforestation of catchment areas of rivers and allied measures are essential, especially for prolonging the life of storage reservoirs, moderating floods and avoiding erosion.

The problem of reforestation is of special urgency in major river valley projects. Soil conservation work, including reforestation in the catchment areas of large river-valley projects, has, by the end of the Second Plan, been completed over an area of about 140,000 acres. During the Third Plan it will cover an area of 1 million additional acres. Programmes for reclamation of ravine lands are also proposed.

Alkaline and saline lands: About 12 million acres of irrigated lands are threatened with the rise in subsoil water and development of alkaline and saline soils. Eight million acres are already affected enough to lower crop yields. As irrigation is extended, proper drainage arrangements are essential. Effective low-cost methods of reclaiming alkaline and saline lands are under experiment.

Desert lands : Continuous over-grazing of grasslands, indiscriminate cutting of trees and improper land use are the main factors which have led to formation of the desert in Rajasthan and similar areas in other States. Recent experimental work has shown that by proper management and care even under arid conditions, grasslands are rehabilitated quickly and a technical programme of grassland demonstration and improvement has been taken up in Rajasthan. During the Third Plan, it is proposed to carry out national reforestation and pasture development programmes over an area of about 100,000 acres. A Central Arid Zone Institute has been set up in Rajasthan (at Jodhpur) with the help of UNESCO to find ways of developing resources not only of the Rajasthan desert but all arid and semi-arid areas in India.

Soil conservation legislation : To carry out contour bunding, soil conservation and other land improvement measures effectively, suitable legislation must be introduced in States where it does not already exist. The legislation should empower the State Government to frame schemes of contour bunding for the basin of a river or a stream, or for a group of villages, and to carry out these programmes through the people who benefit with the support of the village *panchayat* or block *panchayat samiti.*

Training : Special training is necessary for soil conservation and forestry work. In addition to the present training available, special short-term courses are being set up for agriculture and forestry officers as well as rural extension workers.

Forestry

Aside from the use of reforestation as a soil conservation measure, the object of India's forest policy is long-range development of forest resources and increased output through better techniques for timber extraction and wood preservation and seasoning. India's forests, which include a great deal of scrub jungle rather than forests, contribute less than 1 per cent to its national income.

In working out forest development programmes for the Third and later Plans, India's economic needs have been specially considered. According to a recent timber trends study, supplies of all kinds of timber are likely to fall appreciably short of the demand over the next 15 years. Unless some remedies are adopted, by 1975, for example, India will be short of 100 million tons of firewood. Today, to supply fuel nearly 400 million tons of cow-dung (equivalent to 60 million tons of firewood) is being burned annually instead of being used as manure.

So great is India's need for fuel and commercial woods that the Third Plan has allocated $107 million (Rs. 51 crores) to forest development as compared to $40 million (Rs. 19 crores) in the Second Plan.

Among the programmes included in the Second Plan were new plantations of commercially important species, survey and demarcation of forest areas, rehabilitation of degraded forests, construction and improvement of roads in forest areas. Projects for the adoption of improved logging methods and seasoning plants were also carried on. Most of the programmes, including rehabilitation of about 400,000 acres of degraded forests, and planting of 330,000 acres with industrial timber, have progressed well and will be continued over the Third Plan.

The Third Plan has set itself some new targets, such as 210,000 acres planted to teak, one of India's most valuable woods, 40,000 acres to bamboo, 60,000 acres to matchwood and 300,000 acres to fast-growing woods. Improved logging methods, setting up plants to use woodwaste, use of substitute materials, production of improved axes, saws and other logging tools are among other measures to be adopted. To meet the needs by 1975, surveys of the country's forest resources are to be carried out and a long-term programme of planting quick-growing species is to be drawn up.

To improve the supply of fuel wood, conservation work and new plantings in the villages under the community

development extension programme need to be greatly expanded and accelerated. Planting of quick-growing fuel woods on 1.2 million acres is proposed over the Third Plan under farm forestry programme.

7. *LAND REFORM*

High on the list of reforms necessary when India became Independent was reform of the antiquated systems of land ownership which India had inherited out of its history and its past. Many of these systems, semi-feudal in character, were unjust and oppressive, demanding high rents from the farmers (as much as half the crop or more) and destroying the incentives to improve farms and farming methods. Moreover, there were gross inequalities in land ownership.

Long before Independence, therefore, land reform had been a major goal, and land reforms, to be carried out by peaceful means and with democratic support, have had an early part in India's planning. These reforms have two main purposes. The first is to change those aspects of the antiquated land-ownership systems that clearly stood in the way of stepping up farm production. The second purpose, closely related, is to do away with exploitation and injustice and provide for the tiller of the soil some security and more equality of status and opportunity.

The principal steps proposed were to abolish the old so-called "intermediary" or feudal "tax-farming" systems and to introduce reforms in tenant-farming, especially by reducing rents and giving tenants more security.

Other measures were proposed to help reduce the inequalities in ownership of land—a policy essential in a country where land was and still is, for most of India's people, the principal source of security, employment, wealth and even social status. While it was realized that no large amounts of surplus land were likely to be made available for redistribution, reducing inequalities was considered necessary for building up a progressive, cooperative rural economy.

At the same time, it was hoped that such redistribution of land as might be possible would, along with other measures, bring more equality of opportunity to the landless agricultural labourers who, with their families, number about 100 million and are at the bottom of the social and economic ladder.

As the land reform programme is carried out, it is expected that the vast majority of cultivators in India will consist of small owners. They are, as we have just seen, to be encouraged and assisted in organizing themselves in voluntary cooperatives for credit, marketing, processing and distribution and, with their consent, progressively also for production.

National proposals for land reform have been set out in the Five Year Plans as a broad common approach, to guide the States. Land legislation is however in the hands of the States, not the Central Government. Since conditions in different parts of the country vary widely, it is up to each State to legislate and carry out reforms in the light of local needs.

Considerable land reform legislation has been enacted in the States, and there is today wider acceptance of the need and reasons for it. Still, however, the impact of land reform has been smaller than was hoped for. For this there are several reasons. For one thing, it has been too little recognized that land reform is a positive part of development, a key aspect of all programmes to develop the rural areas and increase farm production. Another reason is that not enough attention has been paid to the administrative problems of land reform, and especially to enforcement of reform laws, and to means of informing local farmers and tenants of their rights and enlisting their support in enforcement.

The main task for the Third Plan period will be to finish carrying out the recommended land reform measures as early and effectively as possible, so that both landowners and tenants, free from uncertainties, can go ahead with the important job of increasing food production.

Abolition of Intermediaries

Outmoded tax-farming systems or what are known in India as "intermediary" tenures like *zamindaris, jagirs* and *inams,* existed over half of the country at the time of Independence. Legislation to abolish these intermediary systems has been enacted, and in most cases carried out. As a result, millions of former tenants of the old "intermediaries" have become owners of their land holdings. Large areas of what were once private forests and culturable waste-lands have also come under State management.

Since India's land reform was not based on a policy of confiscation, one of the main concerns of the State Governments today is assessment and payment of compensation to the former intermediaries for release of the land. By the end of 1959, about $344 million (Rs. 164 crores) had been paid out, mainly in the form of bonds, of a total estimated amount due of $1407 million (Rs. 670 crores). Other important tasks for State Governments are the preparation of correct and up-to-date land records and the building up of a land tax collection agency, particularly in those areas where formerly the old *zamindars* served as the only collection agents.

Ceiling on Holdings

Another reform now being carried out to reduce inequalities of land ownership is to set a ceiling on the amount of land any one land-owner may hold.

Legislation for ceilings on *future* acquisition of land has been enacted or promoted in all States. Legislation for ceilings on *existing* holdings has been enacted in several States and bills are under consideration in others. Precise estimates of how much surplus land has become available through ceiling legislation have not as yet been made, but the amount of land is probably considerably less than had been originally hoped for.

One of the main questions is how big the ceiling should

be. The suggestion made in the Second Plan was that the ceiling might be placed at about three "family holdings"—depending on the quality and character of the land. With the adoption of scientific farming techniques, such an area can and will provide progressively larger incomes. Another important question is whether the ceiling should apply to an individual owner or joint family. Legislation on this point varies in the different States.

Evasions of the ceiling have taken place on a considerable scale through transfer of property, largely to relations or other members of a joint family. On the whole, these transfers have tended to defeat the aims of ceiling legislation. In most of the States, after considerable debate, the general policy is to disregard, when computing the proper ceiling for a person or family, any transfers of property made within a certain period prior to the date the ceiling was set, but the precise legislation varies in different States.

The recommendation was made in the Second Plan that, in the interest of efficient production, certain types of land holdings be exempted from the ceiling—tea, coffee and rubber plantations, orchards, and large efficiently managed farms on which substantial investments have been made. Most of the States have exempted plantations; the laws on other types of farms vary.

Tenancy Reforms

Although with the abolition of the "intermediaries" many former tenants became land-owners, various forms of tenant farming and share-cropping still exist. Land-owners may lease part of their land to tenants; sometimes large tenant farmers rent their land to sub-tenants. Altogether, about one-fifth of all cultivated land in India is still farmed under various tenancy and share-cropping arrangements. Legislation to protect tenants and reform abuses has already been enacted in most States; in others, it is in process. The principal tenancy reform measures concern the regulating

of rents, providing security of tenure, and enabling more tenants to become owners.

Rent : The Second Five Year Plan suggested that a tenant's rent should not exceed one-fourth or one-fifth of his gross produce. All States now have laws regulating rents. In several States the maximum rent has been fixed at one-fourth of the gross produce or less; in three States it has been reduced to one-fifth. However, in several States, the normal level of rent still exceeds one-fourth of the gross produce. Moreover, in the early years of tenancy regulation, laws regulating rents were often not effectively enforced and tenants were ignorant of their rights. Since villagers cannot in any case go to court without considerable cost and difficulty, firm enforcement of the rent laws is urgent. It is also hoped that the transition from rent payment in crops to payment in cash will be speeded up, not only to ease the burden on the tenants but to stimulate cash farm investment.

Security of Tenure

In anticipation of land reforms, especially of legislation affecting ceiling and absentee ownership, some large landholders have taken over for "personal cultivation" land formerly leased to tenants, and the tenants were dispossessed. Assuring some security to tenants is one of the main problems of tenancy reform. The Second Plan suggested that the tenant be assured of retaining a minimum area of land.

Eleven States (and all Union Territories) have now passed enabling legislation, although it varies from State to State. In some States, such as Uttar Pradesh, and Delhi, tenants cannot be displaced; in others the tenants must be left with a minimum area; in a few States, a limit is placed on the amount of land the owner may take on for personal cultivation, but no minimum is set for the tenants' use.

But the benefits of the legislation have been less than hoped for and laws to provide security to tenants have not

been easy to enforce. The main reason is that so-called "voluntary" surrenders of land by tenants have occurred on a wide scale in some States. Most of these voluntary surrenders are open to doubt as bona fide transactions, since the tenants in fact have been forced to surrender their rights of lease.

Moreover, since not all land-holders have yet indicated whether and how much of the land they will resume for personal cultivation, tenants have been uncertain as to their future and hesitated to make farm improvements. Various measures for strengthening the legislation and putting a time limit on the right of the land-holder to resume his land have been recommended and passed in many States. Legislation is under consideration in those States which have not yet clarified the issue.

Ownership for tenants : Protection of tenants is but the first stage in tenancy reforms. The real aim is to enable as many tenants as possible to become owners. To encourage peasant ownership, it was suggested in the Second Plan that, with due payment, the tenants should be enabled to become full owners of lands which landlords, under new legislation, could not keep for personal cultivation. Legislation in most States makes some provision for ownership by tenants of such lands, but since much of the legislation is recent, there is not yet a clear picture of progress in ownership. It is understood that in Gujarat and Maharashtra, about 1.3 million tenants have been given ownership of about 2.4 million acres. In Uttar Pradesh, about 1.5 million tenants and sub-tenants have been made owners of about 2 million acres. In Delhi, about 25,000 acres have been transferred to 18,000 tenants and sub-tenants. Over the Third Plan it is urged that States complete the programme for helping all tenants to become owners of the lands which under present laws cannot be taken back by landlords. Enforcement of ceilings should make more such lands available.

Consolidation of Farm Holdings

In areas which have heavy pressure of population and fertile lands, farm holdings have been split, generation after generation, until a large proportion of peasants find that their fields are not only uneconomic fragments but are also widely scattered over the entire area of the village. Cultivation is thus difficult and unprofitable and efficient farm management virtually impossible. "Consolidating" individual plots of land belonging to the same owner is a method recommended to meet this problem. It has been developed with much success in a number of States, notably in Punjab, Uttar Pradesh and Maharashtra. Gujarat and Madhya Pradesh have also started consolidation work. In all about 23 million acres have been consolidated so far, and work is going on over about 13 million more acres.

Wherever it has been undertaken systematically, consolidation of holdings has stimulated agricultural improvement and made it more possible to provide better housing, communications and other village services. In view of the limited personnel available who are skilled in consolidation work, and the need to coordinate it with food production programmes, the Third Plan recommends that priority be given to irrigated areas and those areas in which irrigation is being or can be developed on a large scale.

Agricultural Workers

In all land reform measures, there is considerable concern for agricultural labourers, who make up about a fifth of the rural population and about half of whom have no land at all. In the First and Second Plans, stress has been laid on providing them with house sites and surplus lands, enforcing minimum wages and developing village industries. Of the lands obtained as Bhoodan and Gramdan (voluntary gifts of land and whole villages) nearly a million acres have been distributed. In the Third Plan, emphasis on rural public works programmes and village industries will help

reduce under-employment and raise living standards among agricultural workers. The States and Central Governments plan to spend about $25 million (Rs. 12 crores) on resettling farm labourers on new lands, in addition to the $ 10.5 million (Rs. 5 crores) allotted for providing home sites for them under the village housing programme. It is hoped that as many as 700,000 families can be settled on 5 million acres of reclaimed land.

KEY TARGETS
FOR INDUSTRIAL DEVELOPMENT

—A 70% increase in overall industrial production

—Vigorous development of basic industries, with a 163% rise in steel (ingot) production

—High priority on machine-building and engineering industries by both government and private enterprise

—A four-fold increase in production of machine tools

—Major expansion of basic chemical and drug industries by both government and private enterprise, so that India will be self-sufficient in essential drugs by 1966

—A six-fold increase in production of fertilizers (nitrogenous and phosphatic) from both government and private plants

—Intensified production of basic industrial materials —iron ore up 180%, aluminium up 332%, cement up 53%

—A sustained rise in output of consumer goods: production of bicycles up 90%, of sewing machines up 136%, of sugar up 17%

—A 76% increase in production of coal, to 97 million tons

—Production of zinc and electrolytic copper started for the first time

—Intensified search for oil reserves and a 74% increase in output of petroleum products

—Rapid expansion and stimulation of small industries through industry extension services, technical assistance, cooperatives, credit and marketing facilities

—750,000 new jobs in large industries; 900,000 new jobs in small-scale and village industries

CHAPTER X

INDUSTRIAL DEVELOPMENT

1. *THE LARGE-SCALE INDUSTRIES*

THE past ten years have seen the real beginning of an industrial revolution in India. Industry has not only grown remarkably but has spread into basic new fields that hold the key to future growth. Steel plant capacity—private and public—is three times as high. India has for the first time started heavy engineering, electrical and machinery and machine tool industries on a large scale. It has entered, virtually for the first time, the complex chemical industries which are so important to a modern nation's development—fertilizers, sulphuric acid, urea, polyethylene and synthetic fibres, dyestuffs, and essential drugs and antibiotics. Older industries too—bicycles, sewing machines, telephones, machinery for textile mills, electrical equipment—have greatly expanded in size and production. As a whole, as a result of the efforts of both private and government enterprise, industrial production has nearly doubled; in some new fields, it has tripled or more. Industrial skills and know-how, if not measurable in statistics, have clearly increased, and there are far more skilled workmen and competent managers and entrepreneurs today than ten years ago.

In all, there is no doubt that far-reaching gains have been made in industry, and that these gains have been visible and even striking, in some cases. Yet at the same time, it must be recognized that Indian industry, considerable as it is, is still too small to make a real impact on the living standards and employment for the mass of the people, or radically alter the structure of the economy. Industrial production still accounts only for a tenth of India's national income as compared, say, to Japan where it contributes over a third of the national income. Significant though its growth

has been, industry is still only a fragment of the Indian economy. Real hope of solving India's long-run and enormous problems of raising living standards lies in a powerful step-up of production, a wide diversification into fields that will vitally affect India's long-term capacity to provide goods and jobs.

Moreover, some of the important industries started in the Second Plan have not reached the targets hoped. In the three new government-sponsored steel plants, for example, production was only 600,000 tons in 1960-61 against a target of 2 million tons. Private steel production was also below expectations. Some other key industries have fallen short of targets—fertilizers, aluminium, newsprint, certain types of industrial machinery, chemical pulp, dyestuffs and cement. A few basic industries that should by now have been far advanced in their construction are still only in their initial stages. Instead of making a sizable contribution to the Third Plan, they will not be in full production until the end of the Plan.

While many industries have met and many exceeded* their targets, taken as a whole the shortfall is about 10-15 per cent in terms of the targets originally set. In some instances, the shortfalls have been due to foreign exchange difficulties or delays in completing arrangements with foreign collaborators; in others they have resulted from delays in preparation of blue-prints and recruitment of personnel, inadequate supplies, and new problems of management. Both for private and government enterprises, costs have also risen beyond those expected—in part because of the rise in world prices, in part because of lack of experience in drawing up cost estimates. About 30 per cent more than was originally estimated has been invested in the large-scale industry started under the Second Plan.

The experience of the Second Plan has highlighted the

*For example, in power-driven pumps, diesel engines, electric motors, electric fans, radios, and sugar.

stresses and strains which rapid industrialization imposes on an economy which is compelled to depend upon foreign sources for the machinery, know-how and for a considerable portion of essential raw materials. It has also made clear that the gestation period of a new project is generally longer than anticipated, especially in the case of heavy industries.

Yet, broadly speaking, it is India's industrial development over the past ten years, and especially the last five, that has made it possible for the economy to plan for a more self-reliant growth in the future. In spite of the problems and shortfalls, the progress has been notable in those key industries on which future growth and self-reliance depend, such as in iron and steel, heavy engineering and other capital goods. Clearly, the stage has been set for faster and far more diversified industrial development in the years ahead.

Third Plan Objectives and Priorities

Industry is the Third Plan's top priority after agriculture. In drawing up its proposals for industrial growth, however, India has had to keep in view several aims at the same time and set careful priorities so that scarce resources serve the broad goals of India's growth, and meet its urgent needs.

The objectives: First, India must lay the foundations now for faster industrial growth over the next 15 years. This means in particular that the Third Plan must push ahead on the basic capital and producer goods industries—with special emphasis on machine-building programmes—and also develop management skills, technical know-how and designing capacity. India will thus become more able to provide goods and jobs for its growing population and become more self-sustaining and independent of outside aid.

Second, because demand is likely to rise over the next five years for a wide variety of manufactured consumer goods,

India must try in so far as it can to provide these goods. The need for essential goods will be met fully. But because resources are scarce, some restraint on consumer goods production will be unavoidable, especially in the case of goods of a luxury or semi-luxury character*.

Further, development programmes for industry will have to take into account, and in fact be limited by, the speed with which raw materials, power, etc., can be supplied in adequate quantity. Unless they are expanded very rapidly, power, coal and fuels are likely to restrain growth of industry in the first half of the Third Plan, or hold back adoption of certain advanced technical processes, however desirable they may be, especially those using power.

The priorities: Because India's resources are scarce, priorities have to be set, and plans for developing even the high priority industries have to balance many competing claims of nearly equal importance. First preference must go to using existing plant capacity to the full. This is especially important where there is a wide gap—as there is in several engineering industries—between capacity and actual production, or where working two or three shifts can greatly step up production at low cost. Next preference must go to expanding existing plants rather than building new ones—since this is far quicker and cheaper. (Expanding the existing steel plants, for example, will lower investment per ton of finished steel from about $400 to $300).

In starting new projects, moreover, preference will also have to be given to industries which will produce goods either to replace imports or to expand exports—in short, to industries which save or earn foreign exchange. Special stress indeed must be put on industries producing exportable goods.

*It should be remembered that for the vast majority of the Indian people who have an average family income of perhaps $350 a year, food and cloth make up 70 per cent of all expenditures. Automobiles, radios, refrigerators, electric household appliances which are basic "cost of living" items in the U.S. are luxuries in India, far beyond the reach of any but the highest income groups.

Similarly, it will not be possible to allow industries which depend very heavily on imports of raw materials to expand significantly since the foreign exchange burden will become too great. In all industries, there must be emphasis on using and producing Indian parts and components, rather than depending upon imports.

Summarized, both private and government industrial development programmes over the next few years will generally follow these priorities :

1. Completion of projects proposed under the Second Five Year Plan on which construction has already started or which were deferred during 1957-58 owing to foreign exchange difficulties.
2. Expansion and diversification of the heavy engineering and machine-building industries, alloy, tool and special steels, iron and steel and ferro-alloys; and a step-up in output of fertilizers and petroleum products.
3. Increased production of basic raw materials like aluminium, basic organic and inorganic chemicals and intermediates.
4. Increased production of goods meeting essential needs, like drugs, paper, cloth, sugar, vegetable oils and construction materials.

Third Plan's Programmes for Industry

To start and expand the industries proposed in the Third Plan will call for heavy investment and extraordinary efforts on the part of both private enterprise and government. High —necessarily high—targets have been set in a wide range of industries—iron and steel, machinery, chemicals, consumer goods—based on considered judgments as to the utmost possible effort and investment that can be made. Highlights of these targets are given in this chapter (with a detailed list at the end of the chapter). Overall industrial production is expected to go up about 70 per cent, although in some fields increases will be very much higher.

To develop industries to meet these targets, new investment by private enterprise is expected to be $2362 million* and investment by government $2793 million*, or a total of $5155 million**—the largest single area of new investment in the Third Plan. Somewhat less than half this total amount, $2332 million, represents foreign exchange, most of it for the basic heavy industries to be started by government.

The resources immediately available and in sight for industrial development, both private and government, are however less than these amounts***. In spite of every effort to raise more resources—within India and abroad—it seems probable that there will be some spill-over into the Fourth Plan, and that not all targets of production will be reached. In any case, some spill-over is expected, in view of the long "gestation period" for heavy industries and the fact that many projects proposed are as yet only tentatively drawn up.

How much of the investment will go to each general category of industry is shown here, with a comparison with what was invested in the Second Plan.

INVESTMENT IN INDUSTRY ; PUBLIC AND PRIVATE
(in millions of dollars)

	Second Plan	Third Plan
Metallurgical and engineering industries	1984	2675
Chemical and allied industries (heavy chemicals, fertilizers, drugs, plastics, dyestuffs, cement, paper, etc.)	567	1647
Textile industries	176	230
Food industries	118	250
Miscellaneous (including townships and housing colonies for government industrial projects) ..	242	353
TOTAL ..	$3087 million	$5155 million

*Exclusive of about $315 million to be invested in modernization and replacements. Considerably more than $315 million should be spent on replacements if resources were available.

**For several projects, cost estimates are as yet preliminary. Also, estimates of foreign exchange requirements have been made on the assumption that payment will be in cash and that in general machinery and equipment will be obtained from the cheapest source of supply in world markets.

***The gap between the investment proposed for new industrial development programmes (including minerals) of both government and private enterprise and resources now seen as available is about $890 million. A fuller discussion of this problem has been given in Chapters V and VI.

In general the industries that will be set up by the Central Government* over the Third Plan are the basic industries—iron and steel, industrial machinery, heavy electrical equipment, machine tools, fertilizers, basic chemicals and intermediates, essential drugs and petroleum refining.

As in the past, the roles of government and private enterprise in India's "mixed economy" will continue to be supplementary to one another. Private enterprise has a very extensive field for growth outside the basic industries, but will also take an important part in producing pig iron, alloy steels, coal, fertilizers, machinery and machine tools, and important drugs as well as the whole range of essentail consumer goods. The big government investment to be made in basic industries (and power and transport facilities) will continue to provide the favourable conditions for enlarging private industry under the Plan's overall framework and priorities. Acute shortages of foreign exchange will of course impose limits on expansion and development of some new industries.

The targets set for the Third Plan are based on both government and private capacity and production; the estimates of private production and investment are derived from consultations with development councils and representatives of leading industries over the past year.

Because present resources and especially foreign exchange are not large enough now to start all the industrial plans proposed, the first concentration of both government and private enterprise will be, as we have seen, on completing projects which have carried over from the Second Plan, and on new projects for which external financing is now assured wholly or in part. Preliminary planning has already been done on most new projects included in the Third Plan.

*Some State Governments will take up industrial projects on their own. These will include paper, fertilizers, organic chemicals, coke. Altogether about $134 million will be invested in these State industries over the Third Plan

although a few are as yet only in very early stages of preparation and their completion will probably spill over into the Fourth Plan. A third group of industrial projects—those for which foreign financing has not yet been arranged—will be carried out as soon as resources are available.

THE METALLURGICAL INDUSTRIES

Iron and Steel

Prior to Independence, the domestic iron and steel industry was one of the most active and enterprising in India, but it was producing only half the country's very limited needs in spite of plentiful raw materials. Even in 1956 it was turning out only 1.3 million tons a year, or less than a month's production of one of the larger U.S. steel manufacturers.

Late in the First Plan, and more decisively in the Second, India took steps to increase steel capacity, as an essential means toward making the economy more self-sustaining. Capacity in private steel plants has been more than doubled over the last ten years (3 million tons of ingots), and three new plants have been established by government, with the assistance of U.K., West Germany and Russia. These plants which today have a capacity of 3 million tons are already in production, although as yet, as we have seen, production is far below targets and capacity.

Demand for steel by 1966 is expected to be over three times as great as in 1956. Stepping up steel production and capacity rapidly has, therefore, a high priority in the Third Plan so that India can meet its growing industrial and other needs. The target for steel capacity is 10.2 million tons of steel ingots and 1½ million tons of pig iron. These targets are based on studies in some detail of the demands for steel for railways, machinery and many other rising essential industries.

Since the private steel plants have been only recently

expanded, the additional capacity in the Third Plan is expected to come almost entirely from government plants. The Third Plan proposes first of all to get capacity output from the three steel plants begun in the Second Plan—Bhilai, Rourkela and Durgapur (and from the Mysore State Iron and Steel Works). Further, the capacity of these plants will be doubled, to a total of 6 million tons. A fourth major steel plant will be set up by government at Bokaro, with an initial capacity of 1 million tons. India will thus have 7 million tons capacity in government-owned plants, in addition to the 3 million tons capacity in private plants. Taking these together with some small-scale private electric furnaces, India will thus have its targets of 10.2 million tons capacity.

The investment needed to step up capacity so greatly comes to $1103 million* (Rs. 525 crores) according to the current estimates.

Total production of finished steel over the entire Third Plan period is expected to be about 24 million tons; by 1966 annual production is expected to be three times what it is today. Yet even with the expansion and production proposed there will be considerable shortages of certain types of steel products, certainly over the early years of the Plan; and allocations on a priority basis will be necessary.

Alloy, Tool and Special Steels

Alloy, tool and special steels are more and more in demand as India's industries and its economy develop more fully. These steels are needed particularly for high priority machinery and industrial plant manufacture. So far, India has had to import them and their high price has represented a severe drain on foreign exchange. India, therefore, has put a high priority on making these fine steels within India.

*This includes the amount necessary to produce the additional coal and iron to feed the Bokaro plant and the expenditures for industrial townships at the government-owned plants.

The government will start a new plant located at Durgapur which will have, on completion, a capacity of 48,000 tons. The expenditure to be incurred on this new plant is tentatively estimated at about $105 million (Rs. 50 crores) and the foreign exchange component at about $42 million (Rs. 20 crores).

Some other part of the demand—possibly as much as 50,000 tons—for these high-grade steels will be met by the Ordnance Factories of the Ministry of Defence. The rest of the production needed—another 100,000 tons—should, it is proposed, be provided by private industry as a high priority target.

Non-Ferrous Metals

Aluminium : Among non-ferrous metals, aluminium will continue to be the most important over the Third Plan. Since India has relatively little copper, but plenty of bauxite (the raw material out of which aluminium is made), expansion of aluminium output is desirable. Aluminium can to a certain extent substitute for copper, and it also has export possibilities. The target is 87,500 tons by 1965-66, to be produced by private enterprise. Five projects for private aluminium production have already been approved for action. Whether other projects can be started will depend on whether foreign exchange and the large amount of power required can be arranged for them.

Zinc production is expected to start for the first time in India by the middle of the Third Plan period. Production of electrolytic *copper* will begin, also for the first time in India, in the early years of the Plan.

MACHINE BUILDING AND ENGINEERING INDUSTRIES

Rising production of iron and steel will make possible development of the next most important industries from the point of view of India's future—industrial machinery, heavy

engineering goods (locomotives, for example, and power generators) and machine tools. It is these industries, as we know, which will enable India to expand its railroads, power plants and develop as a whole more and more with the products of its own factories and with less and less reliance on foreign aid. It is also these industries which will build and feed new and diversified industries, and produce more employment and more exports.

In this field, the government will concentrate mainly on production of heavy machinery and heavy machine building. The other high targets in this field are to be filled mainly by private enterprise—tractors, diesel engines, road rollers and shovels, electric cables and wires, freight cars and passenger coaches, trucks and buses, machinery for cement, sugar and textile mills; sewing machines, bicycles, electric fans—to name only a few.

New kinds of machinery are expected to be produced in new plants, but wherever possible in existing plants expanded for the purpose—the latter method being, as we have seen, the less expensive.

Castings and Forgings

Foundry/forge capacity is of crucial importance for machinery manufacture during the Third Plan. The overall Third Plan target is 1.2 million tons of grey iron castings, 200,000 tons each of steel castings and forgings. Some of these will be produced in foundries attached to the government-owned steel mills, and the government-owned locomotive works at Chittaranjan.

Private enterprise will open up some new foundry/forge capacity as a result of its needs for machinery in the automobile industry and in the textile, sugar and cement industries.

Industrial Machinery

In this field, both government and private enterprise must play a large part. The heavy machinery plant being set

up by the government near Ranchi will, on its expansion to 80,000 tons output per year, be able to supply most of the equipment required by the steel mills for adding about one million tons annually to their steel-making capacity. Three heavy electrical equipment plants, also to be set up by government, are designed to ensure from Indian sources a wide range of electrical equipment—enough to step up power generation by 2 million kW per year from 1971 onwards. They will produce heavy motors, rectifiers and control equipment, and turbines and generators for thermal power plants.

Other heavy engineering projects to be undertaken by government include expansion of the Chittaranjan Locomotive Works to permit the manufacture of electric locomotives; a plate and vessel works intended to provide equipment for fertilizer and chemical plants; expansion of the Hindustan Shipyard at Visakhapatnam and construction of a second shipyard at Cochin.

For private engineering industries targets have been proposed, as we have seen, for an extensive range of manufactured items, such as agricultural machinery and construction equipment, power distribution and measuring equipment, rail and road transport items, sugar, paper, cement and textile machinery, and durable consumer goods. Private industry is expected to produce machinery for complete plants to meet the demands of the sugar, cement, paper and textile mills. It is hoped that 80-90 per cent of the components needed for this machinery can be manufactured in India. Groups of private firms working in association— a method already used for sugar plant machinery—can, it is hoped, be used in other fields to speed production. By such means, it is expected that India will become self-sufficient in cement, sugar and textile mill machinery by 1966.

The targets for automobiles and other vehicles are of special interest and importance, since large-scale investments are involved in building up new capacity and the demands on

foreign exchange are high. The targets tentatively proposed are :

	Estimated production (1960-61)	Target for 1965-66
Passenger cars	20,000	30,000
Commercial vehicles	28,000	60,000
Jeeps and station wagons	5500	10,000
Motor cycles, scooters and three-wheelers	18,000	60,000

The target for commercial vehicles includes 4000 vehicles expected to be supplied by the Ordnance establishments of the Defence Ministry.

Machine Tools

The demand for machine tools is expected to rise sharply over the next years—to about $105 million worth by 1966 compared to an output of $15 million worth today. Plans have already been made by government to expand its present two machine tools plants and to establish two new plants, and private industry will be expected to expand also in necessary fields. Small-scale private industries are also making a good contribution—about $10 million worth of machine tools a year. In all, present plans are to increase production fourfold with a target of $63 million worth a year by 1966. This will not, however, be enough to meet the demand and the gap will have to be filled by imports. Shortage of skilled labour and the wide variety of tools needed makes it difficult to step up production further, but every effort will be made to do so.

To assure rapid progress, designing facilities will have a high priority, with the intent of manufacturing, in the not distant future, industrial machinery on the basis of domestic designs.

DEVELOPING THE CHEMICAL INDUSTRIES

One of the most important new fields that India has entered in the last ten years is that of basic and complex

chemicals. This industry is one of the key factors in the advancement of an under-developed country, since chemical products are necessary to support a wide range of other industries—metallurgy, fertilizers, textiles, plastics, to name a few.

Fertilizers

The largest and most significant investment in chemical fields will be in fertilizers. Because of the high urgency of producing more food, the Third Plan proposes by 1966 to create 1 million tons* of production capacity for nitrogenous fertilizers—over four times as much as today. Capacity for phosphatic fertilizers is to be stepped up eight times, to about 500,000 tons.**

To reach the 1 million tons capacity target, both government and private enterprise must play a large part. Government capacity for nitrogenous fertilizers will be expanded to about 730,000 tons. Proposals for private plants with a capacity of 318,000 tons have already been approved. Private enterprise is also expected to provide most of the increased capacity needed for phosphatic fertilizers, and, together with the government plants, are expected to meet the full demand for 400,000 tons of phosphatic fertilizers, by 1966. The overall cost of the fertilizer programme*** is $472 million including $210 million in foreign exchange.

A good part of the new output is being planned in the form of complex and/or compound fertilizers so that some of the phosphate (P_2O_5) requirements will also be met in this way.

Part of the fertilizer to be produced in government plants will come from *the integrated Neiveli lignite project,* now underway. This multi-purpose project proposes stepping up fertilizer production to 70,000 tons of nitrogen, as well as

*In term of nitrogen.
**In terms of P_2O_5.
***On capital account.

mining of 4.8 million tons of lignite a year for thermal power generation and production of carbonized briquettes (380,000 tons).

Sulphuric Acid, Caustic Soda and Soda Ash

Sulphuric acid, considered a "barometer" of industrial activity, is to be produced in far larger quantities. The target is 1.5 million tons in 1966. Most of it will be produced in private plants.

Use of sulphur is expected to go up to 600,000 tons by 1966 (as compared with 180,000 tons today)—another indication of the rising tempo and complexity of the economy. Most of India's sulphur has to be imported and an effort is being made to manufacture sulphur from India's own supply of pyrites, to an annual capacity of 84,000 tons of sulphur.

Caustic soda and soda ash, also basic industrial chemicals, are now being produced in India, and with the expansion proposed for the Third Plan, local production is expected to fill India's complete requirements by 1966.

Organic Chemicals

Considerable development is proposed in this field for the first time, as a result of the constantly rising demand over the last decade from allied chemical industries—plastics, dyestuffs and drugs. While government is taking the initiative in some of the major investment projects, private manufacture of drugs and dyestuffs and plastics will be large and complementary to it.

The recovery or organic hydrocarbons (*e.g.*, benzene, toluene, naphthalene, anthracene and xylene) is expected to be stepped up in government plants along with the increased coking of coal at the steel plants. The chief government proposal, which will serve as a link between these products at one end, and the dyestuffs, plastics, and drug manufacturing plants at the other end, is the new Basic Chemicals

and Intermediates (BCI) project proposed for Maharashtra State. The BCI project as a supplier of intermediate chemicals is linked with a new synthetic drugs project. With these two projects, valuable technical know-how in a virgin field is expected to be developed during the Third Plan period.

Major developments are foreseen in the private organic chemicals industry based on supplies of intermediates from the BCI plant. Aside from strengthening private industry in this field, the new products are expected to assist in bringing down foreign exchange needs in some of the major industries established since Independence.

Pharmaceuticals and Essential Drugs

The Third Plan projects proposed in this important field include: manufacture of sulpha drugs, vitamins, phenacetin, other synthetics and intermediates, antibiotics, phytochemicals such as caffeine, ephedrine, etc. India expects to be virtually self-sufficient in all major drug items by 1966, with all essential drugs available at reasonable prices.

Petroleum Products and Refining

The demand for petroleum products has been rapidly increasing and by the end of the Third Plan is expected to rise to 11.7 million tons. Private refineries are now producing about half this amount. The rest of the requirements are at present being met by imports. The rapidly increasing demand for these products and the heavy drain on foreign exchange which it involves call for strong efforts to start production in India of these very essential commodities.

As described in a following chapter on India's minerals, explorations for oil over recent years have shown that India has some promising oil reserves. The government will be entering petroleum refining as a producer for the first time in early 1962. Except for present private capacity and one

new plant for producing lubricating oils now being considered as a joint private-government enterprise, all further refining capacity will be under the government. Two refineries, at Nunmati and Barauni, are now under completion and will have a capacity of 2.3 million tons. A third government-owned refinery with a capacity of 2 million tons is to be set up in Gujarat, particularly to cover India's needs for diesel oil and kerosene. In common with several other countries, India will face the problem of some surplus output of motor spirit.

Consumer Goods

With India's rising population and incomes, there is a vast growing market for consumer goods. As we have seen, except for essential goods, it will be necessary to restrain production of luxury or semi-luxury items, because of scarce resources. But cotton textile production is to go up 13 per cent, with the help of more automatic looms; rayon and staple fibre by 115 per cent (in terms of capacity); paper and newsprint by 100 per cent; sugar production by 17 per cent (for both domestic use and export); bicycles by 90 per cent (to 2 million bicycles); sewing machines by 136 per cent; of radios over three times. All these figures apply to the large-scale "organized" industries only, and all of them refer to private enterprises. Considerable production is also expected from small-scale private and cooperative industries in some of these fields, as described in later pages.

In all, the fast industrial development of the size and character proposed for the Third Plan represents an enormous challenge to both government and private enterprise—a challenge not only of financing, but of management, productivity, organization, and continuing adaptation to the big advances in science and technology which are constantly taking place. Yet, if every possible effort is made to press the industrial programmes to the utmost, India will not only have raised industrial production by 70 per cent by 1966, but have laid the essential foundations for more self-sustaining and self-reliant growth over future years.

INDIA'S INDUSTRIAL PRODUCTION : PROGRESS AND TARGETS 1950-1966

		1950-51 production	1955-56 production	1960-61 estimated capacity	1960-61 estimated production	1965-66 capacity	1965-66 production	fixed investment 1961-66 ($ million) total	fixed investment 1961-66 ($ million) foreign exchange component
1. METALLURGICAL INDUSTRIES									
1. Iron and Steel									
steel ingots ..	million tons	1·4	1·7	6	3·5	10·2	9·2		
finished steel ..	million tons	0·98	1·3	4·5	2·2	7·5	6·8		
pig iron for sale	million tons	0·35	0·38	0·9	0·9	1·5	1·5	1344	641
alloy, tool and special steel (finished) ..	'000 tons	—	—	—	—	200	200		
grey iron castings ..	million tons	—	—	n.a.	n.a.	1·2	1·2		
steel castings ..	million tons	—	—	0·1	0·05	0·2	0·2	63(*a*)	32(*a*)
steel forgings ..	'000 tons	—	—	60	35	200	200		
2. Other Metals									
ferro-manganese, electro-thermal ..	'000 tons	—	—	150	100	50	200	5·3	4·2
ferro-silicon ..	'000 tons	n.a.	n.a	5	6	40	40	4·2	2·5
aluminium ..	'000 tons	3·7	7·3	18·2	18·5	87·5	0	137	67
copper (fire refined and electrolytic)..	'000 tons	6·6	7·5	9	8·9	22	20		
lead	'000 tons	0·8	2·1	6·1	3·5	8·5	8	1·3(*b*)	0·8(*b*)
zinc	'000 tons	—	—	—	—	15	5	15·3	5·7
tungsten carbide ..	tons	—	—	5	4	69	5	2·1	1·1

II. MECHANICAL ENGINEERING INDUSTRIES

1. Industrial Machinery (1)

cotton textile machinery ..	$million	n.a.	8·4	21	18·9	46·2	42	10·5	6·3
cement machinery	$million	—	0·71(*c*)	2·3	1·3	9·5	9·5	6·3	4·2
sugar machinery ..	$million	—	0·4	22·1	6·9	23·1 to 25·2	21		
paper machinery ..	$ million	—	—	1·5	—	17·9	13·7 to 14·7	14·7	8·4
dairy machinery ..	$million	—	—	0·53	neg.	5·3	5·3	1·1	
industrial boilers ..	$ million	—	—	7·8	0·8	60·9	52·5	21(*d*)	10·5(*d*)
cranes ..	'000 tons	—	—	2·5	1·5	60	60		
machine tools ..	$million	0·71	1·64	14·7	11·6	63	63	84	56·7
heavy machinery building (steel and chemical machinery) ..	'000 tons	—	—	—	—	80	(*e*)	249·9	171·2
coal mining machinery ..	'000 tons	—	—	—	—	45	30		

(*a*) Over and above the expenditure envisaged under Foundry/Forge [included under "heavy machinery building" (see under "Industrial Machinery")], Mining Machinery Project and steel castings foundry of Chittaranjan Locomotive Works.

(*b*) Investment on the capacity under the public sector is shown under the outlay on Minerals.

(*c*) Relates to calendar year.

(*d*) Expenditure envisaged on private sector schemes only.
Expenditure envisaged in the public sector is included under "structural fabrication" and "heavy electrical equipment".

(*e*) Actual production will be linked by and large with the programme for expansion of steel capacity.

N.B.—Capacity for engineering industries is estimated on the basis of double shift operation.

(1) Except in the case of cotton textile machinery, capacity and production under this head are related to the demands for original equipment.

INDIA'S INDUSTRIAL PRODUCTION : PROGRESS AND TARGETS 1950-66—*contd.*

		1950-51 production	1955-56 production	1960-61 estimated capacity	1960-61 estimated production	1965-66 capacity	1965-66 production	fixed investment 1961-66 ($ million) total	fixed investment 1961-66 ($ million) foreign exchange component
heavy plate and vessel works (pressure vessels, heat exchangers and other types of chemical plants and equipment)	'000 tons	—	—	—	—	40	30	42	25·2
structural fabrications (including heavy structural shop)	'000 tons	—	90	500	150	1100	1000	52·5	21
precision instruments (industrial and scientific)	$ million	—	—	7·6	6·3	48·3	25·2	18·9	13·7
surgical instruments	million pieces	—	—	—	—	2·5	2·5	5·7	4·2
watches ..	'000 Nos.	—	—	—	—	360 (*a*)	240 (*a*)	8·4	5·3
2. Railway Rolling Stock and Components									
locomotives :									
steam ..	Nos.	7	179	300	295	300	1175(*b*)		
diesel ..	Nos.	—	—	—	—	n.a.	434(*b*)		
electric ..	Nos.	—	—	—	—	60	232(*b*)		
wagons (in terms of 4-wheelers)	Nos.	2924	41,966 (*b*)	26,000	20,000	33,500	109,866(*b*)	4·2	2·1
passenger coaches	Nos.	479	4384 (*b*)	1300	1210	1420	7837(*b*)		

3. Automobile and Ancillary Industries									
passenger cars ..	'000 Nos.	16·5	25·3	20	20	30	30	178·5	84
commercial vehicles	'000 Nos.			28	28	60	60		
jeeps and station wagons	'000 Nos.			5·5	5·5	10	10		
automobile ancillaries	$ million	0·9	4·8	n.a.	18·9	52·5	52·5		
motor cycles and scooters	'000 Nos.	—	1·5	24	18	48 to 60	50		
4. Ball and Roller Bearings	mill. Nos.	0·08	0·9	1·6	2·9	10	14(*c*)		
5. Earth Moving and Road Equipment									
crawler tractors	Nos.	—	—	—	—	600	500	56·7	37·8
dumpers and scrapers	Nos.	—	—	—	—	600	500		
shovels ..	Nos.	—	—	—	—	125	100		
road rollers ..	Nos.	—	—	800	400	800	700		
6. Agricultural Implements and Machinery									
power driven pumps	'000 Nos	34	37	184	90	184	150		
diesel engines (stationary)	'000 Nos.	5·5	10	62	40	72	66		
tractors ..	'000 Nos.	—	—	1·05	0·6	12	10		
7. Bicycles ..	mill. Nos.	0·1	0·51	2·2	1·05	2·2	2 (*d*)		
8. Sewing Machines ..	'000 Nos.	33	111	268	297	700	700 (*e*)		

(*a*) Relates to the public sector only.
(*b*) Relates to five-year period.
(*c*) By working the capacity on three shifts.
(*d*) An additional 0·5 million bicycles are expected to be produced in the small-scale sector.
(*e*) An additional 160,000 sewing machines are expected to be produced in the small-scale sector.

INDIA'S INDUSTRIAL PRODUCTION : PROGRESS AND TARGETS 1950-66—*contd.*

		1950-51 production	1955-56 production	1960-61 estimated capacity	1960-61 estimated production	1965-66 capacity	1965-66 production	fixed investment 1961-66 ($ million) total	fixed investment 1961-66 ($ million) foreign exchange component
9. **Welding Electrodes**	mill. rft.	—	—	600	350	1080	900		
10. **Ship-building** expansion of Hindustan Shipyard, dry-dock and second shipyard	'000 GRT	—	50 (*a*)	20	20	50 to 60	50 to 60	67·2	14·7
III. ELECTRICAL ENGINEERING INDUSTRIES									
1. **Electrical Transformers** (below 33 kv) ..	mill. kva.	0·18	0·63	2·2	1·2	4	3·5		
2. **Electric Motors** (200 h.p. and below)	mill. h.p.	0·1	0·27	1·25	0·7	3 (*b*)	2·5 (*b*)		
3. **Electric Cables and Wires**									
a.c.s.r. ..	'000 tons	1·7	8·7	28	22	55	44		
v.i.r. and plastic coated	mill. core yd	39·4	86·9	500	220	800	600		
paper insulated ..	miles	—	—	1000	750	4500	4000		
dry core cables ..	miles	—	525	470(*c*)	1077	2000 to 2500	2000		
coaxial cables ..	miles	—	—	300	200	300	300	63	37·8
4. **Electric Fans** ..	mill. Nos.	0·19	0·29	1·8	0·98	2·8	2·5		
5. **House Service Meters** ..	mill. Nos.	—	0·25 (*d*)	0·6	0·46	2·5	2·1		

6. Electric Lamps									
g.l.s. and others	mill. Nos.	15	25·03	43·13(*c*)	38·05	76	68		
fluorescent tubes	mill. Nos.	Nil	0·75	1·2 (*c*)	1·46	7	6		
7. Radio Receivers (organized sector) ..	'000 Nos.	49	102	279·18(*c*)	254	900	900		
8. Storage Batteries ..	'000 Nos.	200	258·08	379·3 (*c*)	509	900	800		
9. Dry Batteries ..	mill. Nos.	136·3	161·1	224·5 (*c*)	200	400	350		
10. Heavy Electrical Equipment (in the public sector)	$ million	—	—	—	—	168	168	218·4	126
IV. CHEMICAL AND ALLIED INDUSTRIES									
1. Fertilizers									
nitrogenous (in terms of nitrogen)	'000 tons	9	79	248	110	1000	800	472·5	210
phosphatic (in terms of P_2O_5)	'000 tons	9	12	60	55	500	400		
2. Heavy Chemicals									
sulphuric acid ..	'000 tons	99	164	476	363	1750	1500		
soda ash ..	'000 tons	45	81	268	145	530	450		
caustic soda ..	'000 tons	11	35	124	100	400	340	88·2	37·8
calcium carbide ..	'000 tons	—	3 (*d*)	17	10	67	60		
sodium hydrosulphite	'000 tons	—	—	2·3	0·6	12	10		
hydrogen peroxide ..	'000 tons	—	—	3	1·2	9·5	8		
3. Miscellaneous Chemical Products									
carbon black ..	'000 tons	—	—	—	—	30	30		
industrial explosives:									
—blasting explosives	'000 tons	—	—	5	6	20	20		
—liquid oxygen explosives	'000 tons	—	—	2	2	9	9	27·3	10·5
—safety fuses ..	mill. coils	—	—	7	2	25	25		
—detonators ..	mill. Nos.	—	—	—	—	80	80		
rubber chemicals	'000 tons	—	—	2	n.a.	3	3		

(*a*) Relates to five-year period.
(*b*) These figures are for 300 h.p and below.
(*c*) Single shift capacity.
(*d*) Relates to calendar year.

INDIA'S INDUSTRIAL PRODUCTION: PROGRESS AND TARGETS 1950-66—*contd.*

		1950-51 production	1955-56 production	1960-61 estimated capacity	1960-61 estimated production	1965-66 capacity	1965-66 production	fixed investment 1961-66 ($ million) total	fixed investment 1961-66 ($ million) foreign exchange component
4. Coke									
soft coke (low temperature carbonization)	mill. tons	—	—	—	—	2	1·8	88·2	55·9
hard-coke (by-product)	'000 tons	—	—	620	500	1160	1100	61·3	27·3
5. Dyestuffs and Organic Intermediates									
dyestuffs ..	mill. lb	—	4	18	11·5	22·4	18	58·8	27·3
intermediates ..	tons	—	—	—	—	25,000	25,000		
6. Drugs and Pharmaceuticals									
sulpha drugs ..	tons	—	83 (*a*)	330	150	1000	1000	82·5	37·8
penicillin ..	mill. mega units	—	6·6	45	40	205	120		
streptomycin ..	tons	—	—	—	—	150	150		
p.a.s.	tons	—	40 (*a*)	145	100	400	400		
anti-dysentery drugs	tons	—	6 (*a*)	60	30	75	75		
i.n.h.	tons	—	1 (*a*)	33	30	100	100		
phytochemicals ..	tons	—	—	—	—	76·4	76·4		
D.D.T.	tons	—	284	2800	2800	2800	2800		
7. Plastics									
polyethylene, p.v.c. polystyrene and others	'000 tons	—	0·7	15·7	10	85	74	57·8	22·1

8. Soap and Detergents									
soap (2)	'000 tons	106	102	254	150	254	500	6·3	2·1
synthetic detergents	'000 tons	—	—	7·2	1·5	20	20		
9. Raw Films									
cinematographic, etc.	mill. sq. metres	—	—	—	—	10	10	18·9	11·6
10. Rubber Manufactures									
automobile tyres ..	mill. Nos.	—	0·9	1·61	1·35	3·7	3	24·2	10·5
bicycle tyres ..	mill. Nos.	—	5·8	16·9	11	38·6	31		
synthetic rubber ..	'000 tons	—	—	—	—	50	50	52·5	26·3
11. Paper Products									
paper and paper board	'000 tons	114	187	410	350	820	700	210	73·5
newsprint ..	'000 tons	—	4·2	30	25	150	120		
security paper ..	tons	—	—	—	—	1500	1500	11·6	8·4
12. Cement ..	mill. tons	2·7	4·6	9	8·5	15	13	126	25·2
13. Refractories and Ceramics									
refractories ..	mill. tons	—	0·28	0·87	0·52	2	1·6	46·2	21
electric porcelain (h.t. and l.t. insulators)	'000 tons	—	4·3	12·5	8·4	30	24	6·3	4·6
glass and glassware (including ophthalmic glass)	'000 tons	92	125	370	225	615	440	23·1	7·4
14. Petroleum Products	mill. tons	—	3·6	6·02 (crude oil)	5·67	10·77 (crude oil)	9·86	154·4	70·1
lubricating oils ..	'000 tons	—	—	—	—	100	100		
15. Power and Industrial Alcohol ..	mill. gallons	8·6	15·2	40	22	72	60	8·4	0·8
16. Industrial Gases									
oxygen	mill. cft.	—	—	1000	700	2300	1650	23·1	13·7
acetylene ..	mill. cft.	—	—	156	90	250	200		

(*a*) Relates to calendar year.
(2) Excepting for the production figure in 1965-66, the figures relate to the organized sector only.

INDIA'S INDUSTRIAL PRODUCTION : PROGRESS AND TARGETS 1950-66—*concld.*

		1950-51 production	1955-56 production	1960-61 estimated capacity	1960-61 estimated production	1965-66 capacity production		fixed investment (1961-66) ($ million) total	fixed investment (1961-66) ($ million) foreign exchange component
V. TEXTILE INDUSTRIES									
1. Cotton									
yarn	mill. lb	1179	1640	2100	1750	2250	2250	68·3	23·1
cloth (mill made) ..	mill. yd	3720	5102	5300	5127	5800	5800		
2. Jute	'000 tons	892	1150	1200	1065	1200	1100		
3. Rayon and Staple Fibre									
rayon filament ..	mill. lb	0·4	16	52·3	47	140	140	157·5	94·5
staple fibre ..	mill. lb	—	14	48	47·8	75	75		
chemical pulp ..	'000 tons	—	—	—	—	100	90		
4. Woollen Manufactures									
woollen and worsted yarn	mill. lb	18·3	21·7	67	28	67	52	4·2	2·1
woollen cloth ..	mill. yd	—	15	48	15	48	35		
wool tops	mill. lb	—	—	10	—	31·5	31·5		
VI. FOOD INDUSTRIES									
1. Salt	mill. tons	2·7	3	3·9	3·7	6·5	5·4	18·9	4·2
2. Sugar (3) ..	mill. tons	1·12	1·86	2·25	3	3·5	3·5	210	25·2

3. Vegetable Oils										
solvent extraction of oil cakes	'000 tons	—	—	550 (cake)	25 (oil)	2000 (cake)	160 (oil)	}		
cotton seed oil	'000 tons	—	—	180(*a*) (seed)	15(*a*) (oil)	850 (seed)	100 (oil)	}	21	5·3
4. Vanaspati ..	'000 tons	153	276	434	330	550	500	}	352'8 (*b*)	90.3
5. Miscellaneous Industries										
TOTAL ..									$5155·5 million	$2332 million

(*a*) Figures relate to organized sector only.
(*b*) Including $105 million for townships and $98·7 million for other public sector projects not covered under above industries.
(3) Figures relate to crop year.

2. *VILLAGE AND SMALL INDUSTRIES*

In India, small industries, including the traditional hand industries in the villages, are a vital part of the economy—indeed of India's way of life. Together these industries employ over 3 million people—more by far than do the large industries, and produce a large proportion of the common consumer goods. The last ten years have seen considerable development of these industries as a result of direct and deliberate stimulation by government, of restrictions on imports, and of the rising demand for goods of all kinds in a fast-growing economy.

Over the Third Plan, they will be even more important. Another 900,000 new jobs are expected to be created in these industries over the next five years, both in towns and rural areas. They are also expected to meet a very considerable share of the increased demand for consumer goods and simple producer goods. Moreover, as we have seen, it is small business and cooperatives that are considered the important means of giving small producers a chance to get a start in industry, develop in skill and efficiency and spread income and employment more widely and fairly.

One of the principal aims of the Third Plan is to help the traditional hand industries on the one hand, and the new small scale industries on the other, to adopt improved techniques and tools and become efficiently organized, step up production and quality and reduce production costs. Subsidies, rebates and sheltered markets—measures adopted to protect employment and growth of the traditional hand industries—are to be progressively cut down as these industries become self-supporting and self-reliant parts of the economy.

Investment in small industries is expected to increase considerably over the Third Plan. It is estimated that private enterprise will invest about $577 million on its own, since small business is one of the key "growing points" of the economy. The government programmes for stimulating

small and village industries will involve a total expenditure of $554 million (Rs. 264 crores) from both State and Central Governments, considerably more than was spent during the Second Plan*. An additional $42 million is being made available for small (principally village) industries under the programme for community development, and some additional funds are provided under refugee rehabilitation and various welfare programmes.

With the private investment and government expenditures proposed, village and small industries are expected to give part-time or fuller employment for about 8 million people as well as whole-time employment for about 900,000.

Small Scale Industries

What India calls "small scale" industries are those which generally use some power and improved techniques, and which are comparable to what is called small business elsewhere. It is these industries which, because of their concentration on new types of products needed today and their keen interest in new techniques, have become the important "growing points" of the economy, developing new skills and managerial competence. In spite of the shortages of certain basic raw materials like pig iron, steel and other metals, the growth of these small scale industries has been impressive,

*In more detail, the allocation of government expenditures is as follows:

	Second Plan	Third Plan	
	(estimated expenditures) $ million	$ million	Rs. crores
Village industries including hand-weaving and spinning	239·6	273·8	130·4
Silk culture and coir	10·7	21·4	10·2
Handicrafts	10·1	18·1	8·6
Small scale industries	93·2	177·7	84·6
Industrial estates	24·4	63·4	30·2
TOTAL ..	$ 378 million	$ 554·4 million	Rs. 264 crores

particularly over the last five years. In a number of industries including sewing machines, electric fans, bicycles, builders' hardware and handtools, there have been increases in production of as much as 25 to 50 per cent a year during the last five years. About 300,000 people found employment in these industries alone—an indication of their big job potential for the future.

To help them develop and adopt better techniques of production and management, an industrial extension service was created early in the Second Plan and Small Industries Service Institutes set up in all States. Many of these give courses in business management for small industrialists, as well as technical advice and help. A National Small Industries Corporation was also set up to provide credit, marketing and other facilities and make available new tools and equipment in an instalment (hire-purchase) programme introduced in 1956. Over $8 million worth of machinery has already been supplied under this programme.

During the Third Plan, one of India's main aims is to expand the extension services, make more machinery available on easy credit terms, increase training, especially of small business managers and government industry officers, and conduct economic research and surveys. India also hopes to develop more small firms as "feeder" units to large industries, and encourage wider dispersal of small industries in towns and rural areas, especially where power becomes more widely available, and encourage many more new small businessmen and cooperative units to get started. A key effort is to assure supplies of raw materials to smaller firms. Shortage of raw materials has been one of their main handicaps over recent years.

How small firms may be developed more successfully as "ancillaries" or as feeders to large units chiefly through voluntary arrangements is now under study for a variety of industries. In some countries such as Japan, this type of relationship has been a significant means of preserving the

social values of decentralized small business and employment while assuring high production.

One of the needs of small business is for workshop accommodation where there are necessary facilities like power, water, transport, etc. About 60 industrial estates were set up for this purpose during recent years. During the Third Plan, about 300 new estates of varying sizes and types are to be set up, located as far as possible in small and medium-sized towns rather than big cities and also in selected rural areas.

Handloom and Khadi

These are India's traditional handweaving and spinning industries. These industries provide very sizable employment. There are over 3 million handloom weavers, and over 1 million part-time spinners, as well as many thousands of carpenters, blacksmiths, etc., engaged in producing and repairing weaving equipment. Production of handloom* cloth has increased from 742 million yards in 1950-51 to about 1900 million yards today. Production of *khadi*** which was about 7 million yards in 1950-51 is expected to increase to about 74 million yards. About 36 million yards of handloom cloth, valued at $10 million, was exported during each of the last three years.

Over the Third Plan, the handweaving industries (plus small powerloom units) are expected to turn out over a third of all the cloth produced in the country—3500 million yards. To improve efficiency of handloom weavers, and help lower costs and raise quality, use of semi-automatic looms and powerlooms in weavers' cooperatives will be encouraged and more credit and marketing facilities made available.

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*Cloth hand-woven of mill-spun yarn.

**Cloth hand-woven of yarn hand-spun both by the traditional Indian *charkha* or spinning wheel and by the improved, so-called Ambar *charkha*.

Village Industries

At present these are mainly the traditional hand industries producing simple goods—matches, vegetable oils, raw sugar, etc.—used largely by villagers. Development of these industries has been held back by the use of old inefficient techniques, lack of extension services and by competition from more technologically advanced industries in the cities and towns.

These industries do and can employ many workers, especially in rural areas where employment is much needed. In the years ahead, however, the character of these village industries is expected to change through the use of improved techniques and progressively of power. Development programmes for them today stress adoption of improved techniques. During the Third Plan they will be helped to become more efficient producers—through training programmes, credit, technical assistance, improved tools, supplies and marketing help. Special effort will be made to develop rural industries through a coordinated training and production programme in some 3000 selected intensive areas with about 5000 people in each area.

Special development programmes are proposed for coir and silk production. These hand industries provide considerable employment in certain areas and are also important in terms of export earning or import saving. By 1966, India hopes to produce 5 million lb of raw silk, as compared to 3.6 million lb today.

Handicrafts

About $13 million worth of India's well-known handicrafts were exported annually during the last three years, and sales within India have also considerably increased. Over the Third Plan the All-India Handicrafts Board, an agency set up in the First Plan, will concentrate on development of 12 key crafts, assist craftsmen to get raw materials, credit and technical assistance, and to organize themselves in effective

cooperative or producing associations. Improvement in design and quality are expected to stimulate both domestic sales and exports.

3. *MINERALS*

India has considerable mineral wealth. Its plentiful reserves of coal and iron ore particularly, as well as of certain other valuable minerals, provide, as we have seen, the stimulation and basis for substantial industrial growth and offer a strong promise of expanding export markets.

At the time of Independence, India's mineral resources were known only in a general way. Detailed surveys made over the last ten years have shown far more clearly the extent and quality, as well as the lacks, in its potential mineral resources. There is now a clear assessment, for example, that India has fairly abundant supplies of coal and iron ore; and adequate supplies of manganese, aluminium, titanium, limestone and raw material for refractories. Recent studies of India's supplies of manganese, indeed, indicate that India has an estimated 180-million-ton reserve instead of the 20 million tons earlier supposed. New explorations have indicated the possibility of some, if not plentiful, sources of oil and natural gas. Substantial amounts of gypsum and sulphur-bearing pyrites have also been found. There are some good deposits of copper, lead and zinc, although India does not have adequate reserves of these valuable industrial materials, nor any workable deposits of tin, nickel or molybdenum.

In all, however, India's minerals are sufficient to provide basic raw materials to a wide variety of industries, to fuel factories, power stations and railway transport, and to sustain a promising level of exports. To exploit this mineral wealth quickly and to the full is essential for India's rapid development.

Over the First Plan period, when there was relatively limited emphasis on industry, the principal effort made was

to survey and investigate India's mineral resources in a detailed and systematic manner. Over the Second Plan, however, with its strong emphasis on industry, production of many essential minerals—particularly coal, iron ore and bauxite—has been substantially stepped up.

The value of minerals produced has nearly doubled over the last ten years—from about $175 million (Rs. 83.4 crores) to $334 million (Rs. 159 crores). The most striking increase is that of iron ore on which production has tripled (from about 3 million tons in 1950 to about 10.5 million in 1960). This rapid increase has been due to the expansion of steel production and the development of substantial exports to Japan and other countries.

Coal production, as a result of intensive efforts by both public and private collieries, increased by about 60 per cent to about 52 million tons in 1960. To serve India's growing aluminium industry, bauxite production is nearly 6 times higher, or 377,000 tons. Production of manganese has fluctuated, rising first because of the 1953 stock-piling programme in the U.S., then declining because of the 1958 recession in the U.S. steel production and because of strong export competition from other countries.

The following table gives a summary of production of some selected significant minerals over the last decade :

GROWTH IN MINERAL PRODUCTION

	1950	1960*
Coal (in million tons)	32·3	51·8
Iron ore (in million tons)	3	10·5
Manganese ore (in million tons)	0·9	1·2
Limestone (in million tons)	2·9	12·5
Chromite (in '000 tons)	17	99
Bauxite (in '000 tons)	64	377
Gypsum (in '000 tons)	206	982
Copper ore (in '000 tons)	360	441
Zinc concentrates (in '000 tons)	2	10

*Provisional.

Third Plan Programmes

The even greater emphasis on industry over the Third Plan calls for a far more intensive effort to develop and exploit India's mineral wealth. High targets have been set for both coal and iron ore. For these and for other minerals, exploration will be vigorously carried on, especially to locate workable reserves of those minerals and metals which India now has to import in large quantities, such as copper and oil; to find new reserves of minerals needed by an expanding economy, such as bauxite, gypsum, coal, limestone; and to find and develop new sources of minerals of high export value such as iron ore. Detailed mapping and prospecting, as well as development, will be required.

About $1130 million* has been allocated for mineral development over the Third Plan, most of it to be spent by the government, since private enterprise is expected to spend only about $126 million in this field. Completion of the projects and final achievement of targets will depend, however, on actual availability of the full resources and some programmes may have to carry over into the Fourth Plan.

Coal

Coal is, so to speak, the "food" of industrial growth—the essential fuel to operate industries, generate power, and run railway transport. Stepping up coal production has, therefore, a very high priority.

On the basis of the Third Plan targets for India's steel and power plants and its railways, which are the major consumers of coal, as well as for domestic and other needs, the total requirements for coal by the end of the Third Plan are expected to be about 97 million tons. A target of this size will require production to be stepped up by 37 million tons over the target of 60 million tons originally set for the last

* $1004 million (Rs. 478 crores) by government, $126 million (Rs. 60 crores by private industry. $479 million (Rs. 228 crores) of the total—about two-fifths—will be required in foreign exchange.

year of the Second Plan. Though this Second Plan target was not met in full, the necessary investment required to reach it had been made, and production in the last month of the Plan was at the rate that would yield 60 million tons a year.

Much of the additional coal required during the Second Plan was obtained from existing mines, mostly from those privately run. The high Third Plan target, however, will call for the opening of a number of new mines in virgin areas. This will require a great deal of effort and capital investment; and foreign technical assistance is being sought to speed development. Private enterprise has agreed to produce about 17 million tons of the additional coal required, government mines contributing 20 million tons. Progress in production will be closely watched and if it lags behind in either the government or the private sector, the target will be adjusted in the other, so that the total planned production is achieved. About $237 million (Rs. 113 crores) has been allocated for coal production, and for developmental investment by government over the Third Plan. Private enterprise will spend about $126 million.

One of India's problems is that although it has large supplies of iron ore, its reserves of high grade metallurgical coal are relatively limited. Since steel plants require high grade coking coal, measures of conservation like washing and blending and economic consumption of coking coal must be undertaken. The setting up of adequate coal washeries—a programme which lagged during the Second Plan period—will be more urgently carried out.

Integrated Neiveli Lignite Project

During the First Plan, important lignite deposits were found in Neiveli, in the South Arcot district of Madras State. Development of these deposits was begun over the Second Plan in an integrated lignite project. Over the Third Plan this project has targets for mining 4.8 million tons of lignite

a year for thermal power generation (400 MW), stepping up fertilizer production to 70,000 tons of nitrogen, and production of carbonized briquettes (380,000 tons). Necessary funds to expand present output to meet these targets have been included in the Plan.

Iron Ore

India's iron ore is of very high grade, excellently suited to steel manufacture. Demand for Indian ore is therefore growing not only from India's own steel plants but also from steel-producing countries abroad.

Over the Third Plan period Indian steel plants will require 20 million tons of iron ore. Ten million tons are needed for export, 8 million tons to Japan alone. The Third Plan has set a capacity target of 32 million tons, three times more than at the end of the Second Plan, and ten times more than in 1950. Japanese financial and technical assistance is being used to develop two of the leading iron ore mines.

Petroleum Products and Refining

The demand for petroleum products has been rapidly increasing and by the end of the Third Plan is expected to rise to about 12 million tons as compared with 6.28 million tons in 1959. Almost all of India's requirements are at present being met by imports. The rapidly increasing demand for petroleum products and the heavy drain on foreign exchange which it involves call for concerted efforts to establish domestic production.

Oil India Limited, a joint venture of the Assam Oil Company and the Government of India, is expected to achieve an annual production of 2.75 million tons of crude oil from the Nahorkatiya area in Assam. An annual production of 2 to 2.5 million tons is expected from the Cambay-Ankleshwar area in Gujarat. But even after full production is achieved, there will still be a large deficit in relation to the country's needs. The Third Plan provides $242 million

(Rs. 115 crores) or over four times as much as the Second Plan for further exploration aimed at establishing additional production. Supplementary funds required for developing production and pipelines will be provided as may be necessary.

Foreign oil explorers have been invited by government to join the quest for oil in India, subject to mutually acceptable terms. Offers have been received in response to this invitation and these are under study. Agreement has been already reached with the Burmah Oil Company.

As mentioned earlier, the government will be entering petroleum refining as a producer for the first time in early 1962. With the completion of the Nunmati and Barauni refineries, the government will have a share in about a third of domestic refining capacity. Another refinery with a capacity of about 2 million tons is to be set up in Gujarat based on the crude oil discovered in the Cambay-Ankleshwar area. The India Oil Company, the government agency set up in 1959 for distribution and marketing of oil, is now importing from Eastern Europe some scarce petroleum products. It will also handle distribution (either directly or under exchange arrangements with other distributing companies) of government-owned refineries.

Other Minerals

As to other minerals, over the Third Plan, funds have been allocated for exploration and exploitation of the copper deposits and the establishment of a smelter with an annual capacity of 11,500 tons; for development of the diamond deposits, exploitation of sulphur-bearing pyrite deposits, and intensified surveys and exploration of other valuable minerals. Considerable funds—about $50 million—have been given for setting up facilities for extraction and processing of uranium and plutonium in connection with India's first nuclear power plant.

4. *SCIENTIFIC AND TECHNOLOGICAL RESEARCH*

In advanced countries, the pace of scientific and industrial research has very sharply increased since the last world war. As a result the gap has widened between the advanced and less advanced countries, even those which, like India, had made some good beginning in research. What India must do today is to narrow the gap by making a very strong effort to step up scientific and technical research. It must also put far more stress on the practical application of science to India's development needs today. Research has, for example, a tremendous contribution to make to the growth of industry and agriculture, of transport and construction. It is hoped that Indian industry will support research more fully than in the past.

Over the last ten years, India established a network* of national laboratories and specialized research centres, under the Council of Scientific and Industrial Research and other agencies, and has steadily increased its expenditures and emphasis on research.

Over the Third Plan India intends on the one hand to strengthen the existing research institutions, and on the other to expand facilities for research over a wide field, particularly in engineering and technology, and development of scientific and industrial instruments. It will also encourage more basic research in universities and stimulate training of research personnel through an expanded programme of research fellowships and scholarships. Special attention will be devoted to practical application of research findings after pilot production and field experiments have proved their validity.

Altogether, for all new development programmes for scientific and technical research, the Third Plan provides

*These include facilities for advanced research in physics, chemistry, metallurgy, fuel, glass and ceramics, botany, food, drugs, roads, building materials, electronics and atomic energy.

$273 million, nearly twice as much as the Second Plan. An almost equal amount will be spent for the running expenditures of the research facilities already started. A sizable part of the new development funds is going to agricultural research, to atomic energy and to research programmes of the various Central Government ministries—such as irrigation and power, transport, minerals, etc.

One of the particular problems India faces is to assure the practical use and application of research findings to industry and development. The National Research Development Corporation was set up with the object of exploiting the results of laboratory research for commercial production. However, a large number of Indian inventions are still unused. Part of the difficulty has been lack of pilot plant facilities or of opportunities to design and manufacture the equipment. Another important reason is lack of sufficient liaison with or interest on the part of industry, especially in developing within India production of equipment formerly imported. Other fields of development—transport, construction and power—have also been slow to use research findings.

More pilot and trial manufacturing facilities are being provided over the Third Plan and it is hoped that industry, through its Development Councils, will make use of Indian inventions and research findings as an essential part of their development. If industrialization is to strike roots of its own in India, both industry and government should stimulate research and new inventions and encourage the creative faculties of scientists, technicians and craftsmen.

Production within India of scientific instruments is another important problem. Today, India imports $21 million worth of instruments every year, not only for science research laboratories, but for use in schools and colleges. A Central Scientific Instruments Organization was set up in 1959 to survey the needs, technical problems, availability of raw materials, quality control, etc. In recent years there has been considerable new local manufacturing of scientific instru-

ments—about $6 million worth in 1960 alone. To stimulate more production, it is urged that government departments and educational institutions plan their needs well ahead, make them known to manufacturers and place advance orders where possible.

India has also been working on problems of standardization and quality control. Metric weights and measures have been introduced and will be the only system recognized by law after December 1966. In cooperation with industry, national standards have been set for many industrial and food products; and quality controls and quality-marking systems are to be extended to new fields. These are particularly important for the export market, as well as sales within India, and, if need be, should be supported by legislation.

Atomic Energy

India has its own Atomic Energy Commission set up in 1948. It is chiefly engaged in developing the use of nuclear energy for the production of electrical power, in producing isotopes and developing and promoting new uses for them in agriculture, biology, industry and medicine. Since India has some of the most important deposits of thorium in the world, the aim is to base the ultimate nuclear power production in the country on thorium, a task which will require long-range research and solution of many technical problems.

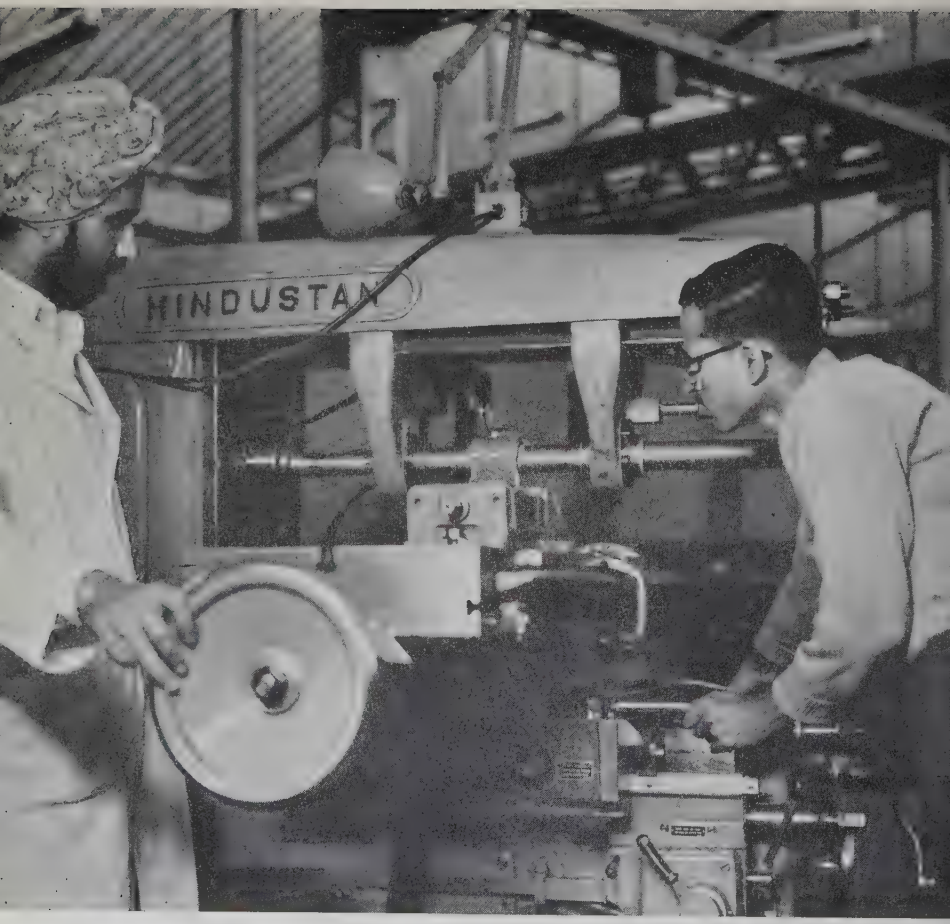
In 1956 the Department of Atomic Energy designed and built a research reactor of the swimming pool type ('Apsara'). The construction of the Canada-India Reactor of the NRX type, a gift from Canada under the Colombo Plan, was completed a year ago. This reactor is the largest potential isotope producer and is specially designed for engineering and loop experiments necessary for the design of future power reactors and for the testing of materials used in them. A third zero energy reactor ('Zerlina') for physical experiments relating to the core design of the future power reactors has

been designed and fabricated in India and went into operation in January 1961.

Work has been started on the design of a prototype power reactor with an electrical output of about 15 MW which will use natural uranium as fuel, heavy water as moderator, and organic as coolant, so that the next step may be taken to plan for construction of large nuclear power stations of Indian design and manufacture.

Research and development work in the field of atomic energy is carried out at the Atomic Energy Establishment which has a staff of about 1300 graduate scientists and engineers. Success in the building up of a body of highly trained technical personnel needed for development of atomic energy has been a most important aspect of the programme, and 200 post-graduate students, many of them on scholarships, are taken every year for training.

The increase in agricultural and industrial production requires a corresponding increase in transport facilities. Substantial outlays have been allocated for expansion of railways, roads, ports and shipping. The ship and boats seen here are in Calcutta port.



With the expansion of heavy industries, power, coal and machine tools, the training of technicians and scientific research figure in the core of the plans for industrial development. Here are two trainees working on an India-made milling machine at the Heavy Electricals plant at Bhopal.

Right: **Two research workers at the Indian Institute of Science, Bangalore**

Not only the industrial plans but programmes of agriculture, rural development and social services also require trained personnel in vast numbers. *Above :* **A group of** *gram sevikas* **at the Literacy House, Lucknow.**

KEY TARGETS
FOR POWER, TRANSPORT AND COMMUNICATIONS

MORE POWER FOR INDUSTRIES AND HOMES

—Power production more than doubled, to 45,000 million kWh; and installed power capacity doubled, to about 12.7 million kW

—Rural electrification for 43,000 villages, or nearly double the number today

—Establishment of India's first nuclear power plant with capacity of 150,000 kW

MORE TRANSPORT FACILITIES

—Modernization and improvement of railways to carry 59% more freight and 15% more passenger traffic

—25,000 additional miles of surfaced roads

—Approach roads linking every village with nearest main road or railway station

—Increase of 22% or about 200,000 GRT in Indian shipping tonnage

—Further expansion of port facilities to handle 49 million tons of cargo traffic

—Improvement of inland water transport and navigational aids

BETTER COMMUNICATIONS

—Modernization of airline services, both internal and external

—17,000 additional post offices

—200,000 new telephones

—Medium-wave broadcasting services covering every area

CHAPTER XI

POWER, TRANSPORT AND COMMUNICATIONS

1. *POWER DEVELOPMENT*

In many ways, it is electric power which will determine India's rise from an impoverished bullock-cart economy to a stage of self-reliant development. The use of electric power —that is, the amount of power consumed per person—is indeed a measure of "development". By this measure alone, India on Independence was one of the least developed countries of the world.

Power was, therefore, given a very high priority in India's plans for development over the last decade, and more particularly over the Second Plan when India began its intensive effort to industrialize. Today, India produces three times as much power as it did ten years ago, and has spent about $1.7 billion to create power-generating facilities.

Yet the demand for power is growing so rapidly that today it far exceeds supply. Over the past few years power shortages have held back industry and transportation and from time to time darkened India's great cities.

The enormous rise in demand for power is seen clearly in the table overleaf. While the rise is sharp in every field, what is particularly significant is the tremendous increase in the power needs of industry and the steeply rising demand for power for irrigation.

As the table shows, moreover, the most heavy users of power are the nation's industries. Nearly three-fourths of all electricity sold to consumers is used by industry. Power development is thus directly related to industrial development. By the end of the Third Plan, India will need well over double as much power as it has today. In 15 years, by 1976, India will need six times as much.

THE GROWING DEMAND FOR POWER, 1950—1965

(in millions of kilowatt hours)

	Over the First Decade 1950—1960			By the end of Third Plan	
	1950	1960-61 (estimated)	% increase 1950—1960-61	1965-66 (anticipated)	% increase over 1960-61
For domestic light and small power ..	525	1492	184	3400	128
For commercial light and small power ..	309	870	182	1900	118
For industry	3984	12,314	209	28,400	131
For traction	308	449	46	1800	301
For public lighting ..	60	192	220	400	108
For irrigation ..	162	836	416	1900	127
For public water works, etc.	189	455	141	900	98
For auxiliaries, transmission losses, etc. ..	1038	3242	212	6300	94
TOTAL ..	6575 million kWh	19,850 million kWh	202	45,000 million kWh	127

ACCOMPLISHMENTS OF THE LAST DECADE

The First Plan increased India's power generating capacity by about two-thirds, from 2.3 million kilowatts to a total of 3.4 million kilowatts. With the Second Plan's heavy emphasis on industrial development, this capacity was to be doubled by the end of the Second Plan in March, 1961. In 1958, however, when the Plan was reviewed, the target was lowered somewhat and the target actually reached was 5.7 million kW.

The target was reduced mainly because of foreign exchange difficulties that arose during the early years of the Second Plan. Also the completion of some of the major hydro-electric projects, such as Bhakra-Nangal, Koyna, Rihand, Hirakud Stage II, was delayed to some extent. In order to avoid severe power shortages in the early years of the Third Plan, foreign exchange has already been provided for carrying out the remaining power projects which earlier

could not be given top priority for foreign exchange. About one-fourth of the government expenditure proposed for power in the Third Plan is allocated to completion of projects begun in the Second Plan or earlier.

Third Plan Targets

To run India's industries and transport systems over the Third Plan period, and to supply more power for rural electrification and irrigation, it will, as shown above, be necessary to produce by 1966 more than double the amount of power now being generated. The target is 12.7 million kW of power generating capacity.

To increase capacity so sharply will require Third Plan expenditure by government alone of roughly $2182 million (Rs. 1039 crores), or more than twice as much as during the Second Plan, in addition to the $105 million (Rs. 50 crores) investment expected to be made by private utilities. Even with expenditures and production of this size, there may be power shortages from time to time in some areas.

The estimates of demand for power by 1965-66 and the targets set are based on the industrial development programme proposed for the Third Plan and also upon a study made in early 1961, when recurrent local power shortages and the urgent appeals of the States for more power, particularly for industry and rural electrification, made clear that previous estimates would fall far short of actual needs. The sharp increases in funds to be spent for power and in the target for power development are one of the major changes made in the final Plan, as compared to the draft Plan proposals of a year ago.

Sources of Power

Over half of the new generating capacity to be created during the Third Plan will be in steam plants, somewhat less than half in hydro plants, and nuclear power will have made its first beginning, as shown overleaf.

How India Generates Electric Power

(in million kW)

	1950	1955	1961 estimated	1966 estimated
Hydro plant	0·56	0·94	1·93	5·1
Steam plant	1·59	2·27	3·46	7·08
Oil plant	0·15	0·21	0·31	0·36
Nuclear plant	—	—	—	0·15
Total ..	2·3 mill. kW	3·42 mill. kW	5·7 mill. kW	12·69 mill. kW

This distribution reflects current analysis of the most economical types of power generation adapted to different needs and localities.

The primary sources of energy available in India are coal, lignite, water power, uranium and thorium, oil, natural and refinery gases. Tidal, power, wind power, geo-thermal power and solar radiation are other possible sources of electricity, but their impact on power development in this country has been insignificant so far.

Coal-fired power stations are well suited for location at collieries and coal washeries, since they can use the large quantities of low-grade coal produced there and thus cause no strain on the transportation system. They require however two to three times as much foreign exchange as hydel stations. As a rule hydro generation is cheap, as no fuel is needed. Hydel stations, however, take longer to set up and cost relatively more to construct, although smaller foreign exchange resources are required. By their nature they have to be located in relatively remote localities, generally away from load centres.

Recently nuclear power has begun to assume particular significance in India. New uranium deposits have been located in the country and these, combined with India's rich deposits of thorium, provide a large reserve of nuclear power. Although nuclear plants require heavy expenditures of

foreign exchange, their importance in saving on transport costs is considerable, since one ton of uranium can produce as much electricity as 10,000 to 11,000 tons of coal. Nuclear stations offer promise, therefore, for areas remote from coal fields where fuel costs are high and alternative cheap hydro-power is not available.

Power generation from oil is at present very costly compared to coal-fired or hydro-power stations, and moreover the diesel oil has to be imported. This type of generation has, therefore, to be confined mainly to isolated locations or small nursery schemes.

The average production costs of electricity of hydro, coal-fired and diesel power stations are in the neighbourhood of 1.2 nP, 3 nP, and 25 nP* per kilowatt-hour respectively. The cost of atomic generation estimated at 3.5 to 4 nP will be comparable with coal-fired stations in areas remote from coal fields.

Because of the different characteristics of the various types of power generation, the Third Plan attempts to achieve optimum economy by proper balance in the different modes of generation, inter-connecting them as far as possible to meet the varying conditions of power demand such as base, peak and seasonal loads in a grid.

Looking ahead to India's future needs for power, in another 15 years India will need about 35 million kW of generating capacity or about six times as much as today. According to present estimates, about half of this will be in hydel stations and the balance mainly from thermal plants. Over the Third Plan and in the future, larger thermal plants are proposed than those India now has, which are small and old and more costly and inefficient than the new larger units proposed. Nuclear power is expected to play an increasing part in future years.

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*India now has decimal coinage. The Indian rupee (about 21 U.S. cents) is divided into 100 nP or naye paise (new coins).

Reducing Dependence on Foreign Exchange

The foreign exchange required for the power development programme of the Third Plan is estimated at $672 million (Rs. 320 crores) or about one-third of the total public expenditure on power. About half of the foreign equipment needed must be ordered in the first year of the Plan.

Since experience in the Second Plan has accented the fact that India's dependence on imports for electrical equipment is a serious obstacle to rapid development of power, and since even during the Third Plan the country will have to depend heavily on foreign machinery and equipment, steps are being taken to reduce this dependence. India's first heavy electrical plant at Bhopal will be completed and expanded and additional plants will be built both by government and private enterprise. These, when completed, are expected to meet a substantial portion of the country's needs in the Fourth Plan for hydraulic and steam turbines, boilers, alternators, motors, transformers, switch-gear, etc.

Research

Several aspects of the power programme will require continued research attention in the Third Plan. These include full investigation and advance planning of hydroelectric projects for the future, standardization of equipment, systematic load surveys, and research on design and construction problems.

Rural Electrification

Demands from rural areas for electricity, especially for use in pump irrigation, have greatly increased over the last few years. An important aim of the Third Plan is to provide more rural power to help develop more rural industries and to raise incomes and living standards.

Even as late as 1956 only 40 per cent of towns with 10,000—20,000 people had electricity. By the end of the

Third Plan all towns of over 5000 population will be electrified. The Plan also will double the number of villages (those with under 5000 population) which are electrified. By 1965-66 the total will be about 38,500 villages or nearly 7 per cent of all such villages.

To speed rural electrification, a separate unit has been set up in the Central Water and Power Commission for initiating and assisting in field surveys and in the installation of small hydro plants of 10 to 100 kW each which can be set up at a modest cost since they are manufactured in the country and do not involve foreign exchange.

While there is a heavy demand for rural electrification, extension of power lines into rural areas is relatively uneconomic. This is mainly because of the distances between villages and the small amount of power used, and because demands for power, especially for farming purposes, tend to be seasonal. During the Third Plan, special efforts will be made to assure that more widespread rural electrification will yield its fullest benefits. Coordinated work is needed at the district and block levels to stimulate maximum use of available power in agriculture and rural industries so that electrification, as it spreads, contributes the utmost to increasing farm production and rural employment.

Planning and Management of Electric Utilities

The Electricity (Supply) Act of 1948 urged that an adequate and uniform national power policy be developed coordinating the activities of planning agencies, and the control and use of India's power resources. Further inter-State collaboration is necessary by the State Electricity Boards, which were established under the Act, to make this coordination effective. It is also essential that public power facilities should earn reasonable profits which can finance future development. Effective management—from the planning and construction through distribution stages—is being urged, and, where necessary, the raising of power rates.

2. *TRANSPORT AND COMMUNICATIONS*

The experience of these past ten years has highlighted the crucial importance of transport and communications in economic planning.

India inherited, on Independence, the largest railroad system in Asia. But good as it was, it was not designed or in condition to support the enormous and rapidly rising demands for transport from a developing economy. Moreover India's road system, except for a few main highways of strategic importance, was inadequate in several ways; and India's shipping had barely made a beginning.

Over the last ten years India has put very sizable funds and effort into building up a transport system equal to the tremendous demands of a fast developing nation. About $3828 million (Rs. 1823 crores) have been spent, more than half of it on the railways, which have had to bear most of the transport burden. During the First Plan the main job was to rehabilitate the transport systems and especially the railways, which had deteriorated greatly from the strain of the war and Partition. Over the Second Plan, with its strong emphasis on industrial growth, the urgent task was to develop new carrying capacity in the railroads, in road transport and in shipping—primarily to meet the heavy transport needs of new basic industries like coal, iron and steel and cement.

The achievements have been considerable. The railways today are able to carry twice the freight traffic (and one-fourth more passengers) than ten years ago. The amount of freight moving by road has tripled; the capacity of India's major ports has gone up by 85 per cent.

But demands for transport have run ahead of supply—and serious congestion, especially around the end of the First Plan and beginning of the Second, arose both at railways and ports and from time to time held back development projects and production. In spite of a vigorous effort

over the last few years, the railroads particularly are still operating under strain. Local, sometimes severe, traffic bottlenecks especially in the chief industrial regions have developed from time to time. In short, India has been experiencing what other countries have felt in their early stages of development—that demands for transport rise at a far faster rate than the rate of national growth or production in any one aspect of the economy. This trend is expected to continue and as India's industrialization is intensified during the Third Plan transport facilities will probably continue to work under strain.

Looking ahead to the tremendous growth in industries proposed for the next five years—especially in coal, steel and iron ore—India has therefore set a very high priority on further and more rapid development of all forms of transport, as a basic necessity to speed widespread economic growth.

Expenditures for transport and communications will be second only to those devoted to industry itself—$3121 million (Rs. 1486 crores) by government alone. In view of the urgent needs of the economy and the huge investments involved, expansion of transport, as in the past, is mainly a responsibility falling upon the government. Private enterprise, however, is expected to spend about $525 million (Rs. 250 crores) largely for road transport and shipping.

Most of the government funds*—about three-fifths—will be spent on railway development since the railroads will

*Specifically, the government outlays will be spent as follows :

	$million	Rs. crores
Railways	1869	890
Roads and Road Transport	624	297
Shipping, Ports, etc.	321	153
Civil Air Transport	115	55
Posts and Telegraphs	143	68
Broadcasting	15	7
Tourism, Others	34	16
TOTAL ..	$3121 million	Rs. 1486 crores

inevitably have to carry the bulk of heavy goods traffic. A special committee, however, is now studying a long-term policy for transport development, especially the coordination of road and rail transport and the part coastal shipping can play to relieve strain on the railroads, and some future adjustments may be made.

Railways

The chief aim of the railway development programme in the Third Plan is to complete replacements of over-aged stock, so far as possible, and provide the additional facilities required for the increased traffic. The Plan also will continue the work, already well started, of developing domestic manufacture of equipment so that the railways can be increasingly self-sufficient.

Third Plan programmes are being based on an expected increase in freight traffic of about 59 per cent within the Plan period, to a total of about 245 million tons in 1965-66, or two and a half times the volume in 1950-51. About 87 per cent of the additional rail traffic now expected will come from moving iron and steel, mineral ores, coal and cement. The traffic load five years from now cannot, however, be precisely estimated since locations of some important industries—such as coal fields and fertilizer plants—are not as yet known exactly, and the pattern of movement of future goods may vary from the recent past.

The Third Plan, like the Second, plans for a moderate 3 per cent per year increase for passenger services. While not much can be done to relieve the existing overcrowding in trains, some new conveniences—at an austerity standard—will be installed at railway stations.

For railway development in the Third Plan, in addition to the proposed allocation of $1869 million, funds available from the Railway Depreciation Reserve Fund for current replacement will bring the total outlay to $2678 million.

Just under half of the proposed outlay for railroads will

go to providing new rolling stock—locomotives, freight cars and passenger coaches—to handle the expected increase in traffic and also to replace some over-aged stock. Special arrangements are being made for bulk handling of coal and iron ore. Development programmes also include substantial funds for increasing line capacity—by doubling or partial doubling of the existing lines, dieselization, electrification, and providing crossing stations, additional loops, yard remodelling, track renewal, bridge works and signalling and safety works. Funds are provided for the construction of 1200 miles of new lines.

In drawing up the Third Plan programme, an important aim is to save on imports and foreign exchange by achieving self-sufficiency in railway equipment through greater domestic production. India already has substantially increased its capacity for manufacturing rolling stock within the country in the Second Plan. All the steam locomotives, coaches and freight cars needed, as well as all mechanical signalling equipment, are now being made in India—a very significant achievement. Plant capacity is being built to produce the entire supplies of track materials. As far as possible, efforts will be made in the Third Plan period to manufacture diesel and electric locomotives and other equipment which are still being imported. As an indication of the progress already made in developing Indian sources of supply, the foreign exchange needed for railway development in the Third Plan is estimated at $391 million (Rs. 186 crores), only about half as much as in the Second Plan, although the new development programme is somewhat larger.

Roads

As early as 1943, a long-term road development plan known commonly as "The Nagpur Plan" laid down certain broad objectives, in line with India's needs over a period of 20 years. With the road construction done over the past decade, India has exceeded the Nagpur Plan targets both

for surfaced and unsurfaced roads. By early 1961, the mileage of surfaced roads in the country was an estimated 144,000 (48 per cent more than in 1950-51) and that of unsurfaced roads over 250,000 miles. The road network has, however, certain gaps such as unbridged river crossings, substandard surface, narrow lanes, etc., and about 60 per cent of the total mileage consists of unsurfaced dirt roads only, many of which become impassable in the rainy season. Moreover only a sixth of the national highways are more than one lane wide, and hilly and under-developed areas are still comparatively poorly served by roads.

Highways engineers of the State and the Central Governments have recently drawn up another 20-year road development plan for the period 1961—81. The broad objective of this plan is that no village in a developed and agricultural area should remain more than four miles from a surfaced road and more than 1½ miles from any type of road.

The broad order of priorities proposed in the new 20-year plan is that : (a) on all arterial routes, missing bridges should be provided and the road surfaces improved at least to one-lane black-topped specification; (b) the main roads in the vicinity of large towns should be widened to two lanes or more; and (c) the major highways should be at least two lanes wide. For rural roads the first job must be their improvement to fair weather standard. These priorities have served as a general guide for drawing up road development programmes in the Third Plan.

In the Third Plan, the total funds proposed for road development are about $680 million (Rs. 324 crores) which is slightly more than was allotted in the Second Plan. With this amount it may be possible to add about 25,000 miles of surfaced roads. Most of the expenditures will be made by the States where there has recently been increasing demand for district and village roads. Some of the most backward areas will spend as much as a third of their total five-year budget on roads. The Central Government will concentrate

largely on improving existing national highways, especially near congested industrial areas.

Considerable local road building has been done under the programmes of district boards and municipalities, and under community development and local works programmes. In the Third Plan also, all these programmes will include funds for further local road development.

Road Transport

Road transport has greatly increased in recent years. In the last decade, the number of trucks has doubled and the amount of freight carried has more than doubled. Passenger traffic has also risen sharply. The increase in both freight and passenger traffic would have been considerably greater if there had not been a shortage of new trucks and buses, a shortage due largely to foreign exchange difficulties. Over the Third Plan, freight traffic by road is expected to go up even more rapidly than rail traffic—possibly as much as 120 per cent*.

Commercial road transport is largely in the hands of private operators. Its expansion depends on progress in the manufacture of trucks. The Third Plan target is production of 60,000 new vehicles, double the production of the Second Plan period. Altogether, India expects to have about 285,000 trucks and 80,000 buses on the roads by 1965-66. Some road transport services, handling chiefly passenger traffic, are publicly owned, by States or municipalities. About $55 million (Rs. 26 crores) will be spent on expanding these services and about 7500 vehicles will be added to government transport fleets.

Shipping

Indian shipping has grown substantially over the past decade. Despite foreign exchange difficulties, the Second Plan target of 900,000 GRT—more than double the tonnage

*As measured in millions of ton-miles.

ten years ago—has now been reached. However, much leeway remains to be made up, for Indian ships at present carry only about 8 to 9 per cent of India's overseas trade. Development of coastal shipping is also necessary to relieve the strain on railroads.

About $39 million was spent on shipping development in the First Plan and about $110 million in the Second Plan. A significant step taken during the Second Plan period has been the establishment of a non-lapsing shipping development fund for granting loans to private shipping companies to enlarge their fleets.

For the Third Five Year Plan, the National Shipping Board has recommended a target of about 1.4 million tons to be reached by 1966. But because of the large amount of foreign exchange needed, it has been necessary to limit Third Plan expenditure to about $116 million (Rs. 55 crores). About $15 million (Rs. 7 crores) more will come from the shipping companies. Within this amount, it is expected that about 200,000 GRT will be added, aside from replacement of over-aged ships. Most of the new tonnage is proposed for the overseas trade. How far India can go in developing shipping will depend largely on the availability of foreign aid for this purpose and its development programme has, at this time, to be modest.

Ports, Harbours and Inland Water Transport

Virtually all of the goods India buys or sells overseas come in through a few major ports. Port development has had, therefore, an important part in India's Plans. The need for development was heightened by the serious congestion at the ports in the early years of the Second Plan. Several measures were taken at that time to increase port capacity and to enable the major ports to handle large-scale imports of heavy cargo required for industrial projects in the Second Plan. Capacity of the major ports has now been increased

to about 37 million tons as compared with 20 million a decade ago.

With the completion of projects most of which are already underway, the major ports will reach a total capacity of about 49 million tons during the period of the Third Plan. The Third Plan's main objective, however, will be to maintain and improve the existing port facilities rather than to increase port capacity. Bombay, Calcutta and Visakhapatnam are the major ports to be improved. A start will be made on fitting two smaller ports for all weather service. Third Plan funds proposed for major and minor port development are $273 million (Rs. 130 crores). This includes the contribution likely to be made from the ports' own resources.

The Third Plan also allocates some funds to continue establishing lighthouses, buoys, radio beacons and other aids to navigation. About $13 million (Rs. 6 crores), twice the amount provided in the Second Plan, has been set aside for development of inland water transport.

Civil Air Transport

There has been a rapid expansion of civil air transport since Independence. Between 1953, when the air services were taken over by government, and 1960, the number of passengers carried increased from 460,000 to almost 800,000 and the miles flown from about 21 million to about 27 million. The Second Plan provided for both the modernization and improvement of a number of existing aerodromes and for the expansion of the fleet of the two nationally owned air corporations—Indian Airlines Corporation (internal service) and Air India International (overseas service). Among the more important construction projects undertaken were the development of Bombay, Calcutta and Delhi aerodromes for the operation of jet aircraft.

The Third Plan provides $116 million (Rs. 55 crores) for civil air transport, about half of it to go for modernization

of aerodromes and half for the replacement of Dakota aircraft by the Indian Airlines Corporation and the purchase by Air India International of more jet aircraft.

Communications

The rising tempo of industry and business has brought sharply rising demands for communication services. For example, post offices are now handling 80 per cent more mail, and the number of long distance (trunk) calls has increased five-fold in the past decade. To meet these rising demands, communication services have already been expanded considerably. The number of post offices has more than doubled (from 36,000 to 77,000) and the number of telephone connections nearly tripled (from 168,000 to about 460,000) over the last ten years. During the Third Plan period, it is proposed to provide 17,000 additional post offices, and about 200,000 more telephone connections.

India already has its own factory to produce telephones and considerable transmission equipment. It will be expanded to produce 160,000 instruments a year by 1966, as well as additional equipment. As a result India's Posts and Telegraphs Department expects to obtain a great part of its equipment needs from within India, and only a small amount of foreign exchange will be necessary for Third Plan development.

India's overseas communication services—direct radiotelegraph, telephone and photo services—have already been considerably expanded, and will be developed further during the Third Plan.

Tourism

There has been a welcome increase in the number of foreign tourists visiting India in recent years. The foreign exchange earnings from tourism are estimated to have increased over four-fold, from $9 million (Rs. 4.2 crores) in 1950 to about $42 million (Rs. 20 crores) in 1960. There

is also considerably more internal travel. To increase India's cultural contacts with other countries as well as to earn foreign exchange, developing tourism has a high priority.

Broadcasting

Radio has an important part to play in a still largely illiterate country composed of many diverse peoples. Over the past decade, India has therefore been building up its broadcasting facilities. During the First Plan, each language area was provided with at least one transmitting station. The aim in the Second Plan was to extend broadcasting services to as wide an area as possible and to strengthen the overseas broadcasting services. The Third Plan will make internal coverage more effective by expanding the medium-wave broadcast service. An experimental TV system—India's first—has already been installed in Delhi and during the Third Plan a television service will be set up in Bombay. To reach the rural areas, community listening sets are being provided in a large number of villages.

KEY TARGETS
FOR EDUCATION AND THE SOCIAL SERVICES

EDUCATION

—About 20 million more girls and boys in elementary and secondary schools

—460,000 more students in colleges and technical and professional institutions

—Free education for all children up to 11 years

—A school within reach of nearly every village

—A nation-wide programme of merit scholarships through higher education

HEALTH

—Eradication of malaria, until recently one of India's primary health hazards

—A nation-wide eradication campaign for small-pox, and control campaigns for other communicable diseases

—Safe drinking water for most of India's villages, towns and cities

—A nation-wide rural health service, with at least one health centre for every 60—70,000 villagers

—8200 family planning clinics, and a nation-wide high priority campaign on population control

HOUSING

—900,000 new houses under public housing programmes

—Home loans for low and middle income families

—Slum clearance and improvement programmes for major cities of over 100,000 population

—A start made on urban planning in 45 cities and industrial centres

—Land acquisition and development in urban areas

OTHER SOCIAL SERVICES

—For India's 23 million tribal peoples, development through education, economic and social measures

—Special assistance, particularly in education, housing and employment to backward classes

—Expansion of social welfare programmes with special emphasis on children's welfare

Chapter XII

EDUCATION AND THE SOCIAL SERVICES

1. *EDUCATION*

India's rise out of its under-developed past is perhaps nowhere so clearly seen or so significant as it is in the number of young people now going to schools and colleges. Ten years ago not even half of India's children went to lower primary schools, only 5 per cent got to secondary schools, less than 1 per cent to colleges. Facilities for training in engineering, medicine and other modern professions were few. Education generally was the privilege of the relatively better off, chiefly from the cities.

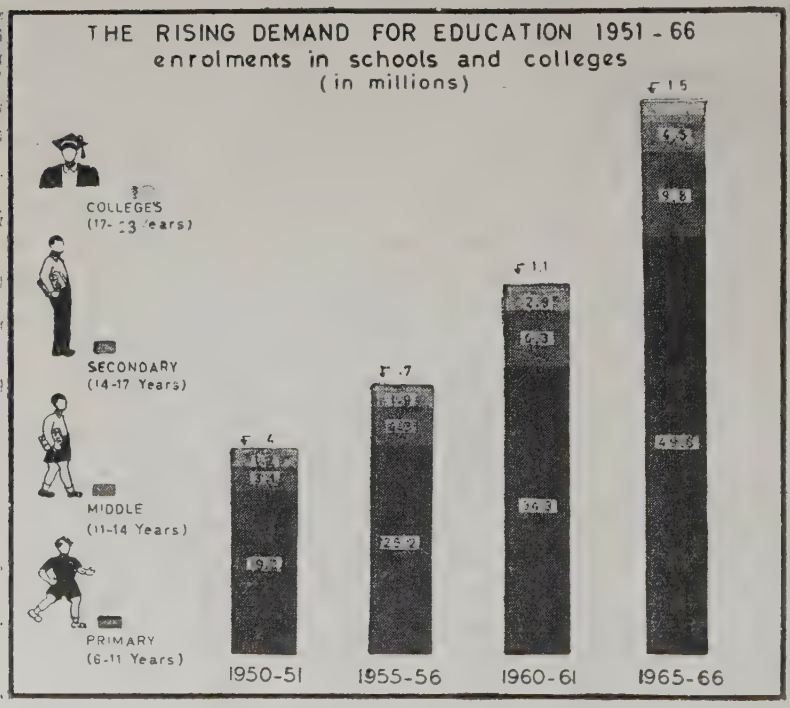
Today, the picture is radically changing, although India has still far to go. The demand for education has been increasing very sharply, not only in the cities but also in rural areas where, with the stimulation of the community development programme, villagers have given schools one of their highest priorities. Today, nearly 15 million more children are in primary schools than ten years ago. Enrolment in high schools has gone up steeply and is two and a half times what it was in 1951 and the demand for college level education—including professional and technical training—has risen even faster. More than a million young people over 17 are taking higher studies in colleges, universities and technical and professional institutions.

Education is spreading more and more to those groups—women, tribal peoples, the depressed castes and classes—for whom schooling was once a rarity. For example, while far fewer girls than boys go even now to primary schools, especially in backward areas, the education of girls is growing, as old traditional attitudes give way to a new outlook and new opportunities open for educated women.

Less developed areas, which had long lagged far behind

in education, have steadily risen in school enrolment, though they still are below the national average. Children of the so-called backward classes—Harijans and tribal people—are being helped by the hundreds of thousands with scholarships and freeships to go to school.

Over the past decade, merely to keep up with the incoming tide of new students has involved not only substantial expenditures, but problems of training teachers, building and equipping schools and colleges, setting up new institutions for engineering, medicine, agriculture and modern technology. Moreover, India had long been dissatisfied with outmoded school and college systems and teaching and examination methods carried over from the past. Since Independence, therefore, India has made an equally strong effort to improve the quality of education and adapt the edu-



cational system as a whole to teach the new skills and outlook needed by an independent developing nation.

The progress made so far is shown in the following table with the Third Plan's targets for bridging the large gap yet to be covered.

THE RISING DEMAND FOR EDUCATION : 1950—65

	The First Decade			% increase in 1960-61 over 1950-51	Third Plan (proposed targets)
	1950-51	1955-56	1960-61 (estimated)		
I. Enrolment in Schools (in millions)					
6-11 years ..	19·2	25·2	34·3	78	49·6
11-14 years ..	3·1	4·3	6·3	103	9·8
14-17 years ..	1·2	1·9	2·9	142	4·5
Per cent in schools out of total in age-group					
6-11 years ..	43	53	61	78	76
11-14 years ..	13	17	23	103	29
14-17 years ..	5	8	12	142	15
II. Enrolment in colleges (in thousands)					
17-23 years ..	406	708	1052	159	1515
in Arts, Science and Commerce	*360*	*634*	*900*	150	*1300*
in Professional and Technical institutions ..	*46*	*74*	*152*	230	*215*
Per cent in colleges out of total in age-group					
17-23 years ..	1	1·59	2·11	159	2·74
in Arts, Science and Commerce	*0·9*	*1·42*	*1·8*	150	*2·35*
in Professional and Technical institutions ..	*0·1*	*0·17*	*0·3*	230	*0·39*

WHAT THE THIRD PLAN PROPOSES

Good as progress has been, much remains to be done to put good education within the reach of India's young people. One of the major decisions of the Third Plan is to provide,

for the first time in India's history on a nation-wide scale, facilities for free and compulsory education for all children 6 to 11 years old. Another is to provide far more scholarships and freeships to enable capable young people, regardless of income or occupation, a chance to rise up the educational ladder. Another and far-reaching decision is to put far stronger emphasis on science and technical and vocational training in both secondary schools and colleges so that India may have more skilled and trained young people to man its development programmes. Girls' education will be especially stressed. Training of teachers for all stages of education will have a high priority, since today only about two-thirds of Indian teachers are trained.

The Third Plan has allocated a total of about $1023 million (Rs. 487 crores)* or roughly double the amount spent during the Second Plan for all education development programmes. This amount does not include the $580 million (Rs. 276 crores) being allocated to technical, vocational and professional training.

Elementary Education

With free and compulsory schooling available for all children 6 to 11 years old, during the next five years, 15 million more pupils will be brought into primary schools—as many or even slightly more new pupils than came into the schools during all the last ten years. But there will be problems in securing 100 per cent attendance. One of the reasons is that the poorer families take their children from school as

*This includes about $178 million to be provided for primary, secondary and social education under the community development programme and education programmes for tribal people and backward classes. All of these funds are to be used only for developing new school and college programmes and facilities. Costs of running the schools already set up will be as much as $1·5 billion (Rs. 700 crores) over the Third Plan. In addition, local contributions from villagers to build and run their schools may be as much as a billion dollars over the next five years. Altogether the total to be spent by government and other sources on developing and maintaining education over the Third Plan may be as high as $3·5 billion. Again this excludes the amounts to be spent on technical and professional education. If this amount is added the total would be well over $4 billion.

Free and universal primary education is one of the Directive Principles of India's Constitution. At the end of the Third Plan, nearly 50 million children of the age-group 6—11 are expected to be at school. The picture above of children going to school in light rain is from Coorg, Mysore.

One of the striking achievements of the years of Independence and planned development is the expansion of medical facilities and public health measures. The expectation of life for children born in 1961 has risen to 47 years, compared to about 32 barely a dozen years ago. Doctors, nurses and health workers are being trained in large numbers.

Both in the Constitution and under the development Plans, uplift of the backward classes has received special attention. They are helped to own lands, build houses, learn crafts, set themselves up in trades and send their children to school. *Above :* **Fibre weavers from the tribal area of Koraput, Orissa.**

Urban and rural housing figures prominently in the social welfare programmes of the Central and State Governments.

soon as they are old enough to earn a little money for the family income. Another and major reason is that the proportion of girls attending school is still relatively low. Also some areas are especially backward. For these reasons, by the end of the Third Plan, only about 76 per cent of all 6 to 11 years old children will be in school. With boys it is hoped to have nearly 90 per cent attendance, but with girls the proportion may be only about 60 per cent and in some States markedly lower. Even this will be a good step forward : today about 80 per cent of all boys are in school and only 40 per cent of all girls.

To make sure of the fullest possible attendance, a primary school will be set up "within easy walking distance" of almost every child. To get more girls into school, there will be local school campaigns on women's education directed towards parents, an increase in the number of women teachers, and even appointment of "school mothers" in areas where there is still reluctance to accept co-education. It is expected that the villages themselves will help—as many already have—in a "school-going" drive. Some States, with support from the local community, have started a school lunch programme and by 1966 it may cover over 3 million children.

To bring some changes into the rote-learning pattern of the past, all elementary schools will continue to be oriented towards what is called "basic education". This is a craft-centered "learn by doing" system first sponsored by Mahatma Gandhi.

Some 360,000 additional teachers will be needed to provide free education for all children in the 6 to 11 age group alone. Teacher training facilities, particularly in basic education, will be expanded and strengthened so that by the end of the Third Plan at least 3 out of 4 teachers will have been trained and trained more fully. Short-term courses are being provided for untrained teachers and extension work will be started by teacher training institutions to help

improve the quality of primary teaching in nearby schools. Although already much has been done, continuing efforts will be made to improve teachers' salaries from their former appalling low levels, and provide pensions and other benefits available to other government servants, in order to step up recruitment.

As was shown in the table earlier, the number of children 11 to 14 years old who go to school (to what India calls a "middle school") is expected almost to double during the Third Plan. Middle school education is not yet widely available especially in rural areas and can grow only as primary education spreads. Between 1966 and 1976, that is, in the course of the Fourth and Fifth Plans, India will begin to provide free and compulsory schooling for this age group as well, so that the aim set forth in India's Constitution, of free education for all children of 6 to 14 years, can be fulfilled. Looking at the whole age group 6 to 14, today about 49 per cent of them are in school. By 1966 it is hoped to have about 59 per cent in school.

Secondary Education

Enrolment in secondary schools has expanded faster than education at any level below college, as more and more young men and women strive for new opportunities in education and employment. Free compulsory secondary schooling for children over 14 is not yet possible on a nation-wide basis, and may not be for another 20 years or more. Most schools are privately run, usually with some government grants. The main emphasis of the State and Central Governments therefore has been to improve the quality of education provided, and considerable effort has been made in the last ten years to improve and reorganize curricula and teaching methods. An important aim has been to make secondary schooling more complete and meaningful in itself rather than simply a preparation for college entrance examinations. Another aim has been to give it a vocational and practical bias,

through the introduction of training in science and crafts as key subjects in all higher secondary schools and through workshop practice in the new "multi-purpose" schools.

The three main efforts of the Third Plan will be : to provide more facilities for science education, to improve the new multi-purpose schools, and to set up more of the new "higher" secondary institutions long recommended.

Considerable work to expand science teaching has already been done and by early 1961, general science was being taught in nearly all of India's 17,000 secondary schools. Perhaps a third of the schools offer specialized elective courses in particular sciences. With about 22,000 secondary schools expected by 1966, the Third Plan proposes to introduce science far more widely—in compulsory as well as elective specialized courses—by providing special assistance for laboratories, training of teachers and stimulating science clubs.

In the course of the Second Plan about 1900 secondary schools have been converted into "multi-purpose" schools which include vocational training, so that students can take up courses suited to their aptitudes. The main emphasis in the Third Plan will be on improving and developing those schools already set up, training teachers for them and opening only a limited number of new ones.

A basic reform long urged by leading educators has been to convert India's ordinary secondary schools to "higher" secondary schools, with a four-year course instead of three. Already one school in five has been made a "higher" secondary school. Over the Third Plan it is hoped to make it about one in three.

At present only about one girl in 25 goes to secondary school. Yet girls with a high education are urgently needed for many kinds of jobs—as primary school teachers, rural extension workers, nurses and social workers—and a special effort will be made to enrol more girls.

The expanding secondary schools will need 61,000 more teachers by 1966. Although there are now four times more

training colleges than a decade ago, far more are needed. Nearly 100 new training institutions will be set up, and it is hoped that at least three-fourths (against the present two-thirds) of all secondary school teachers will be trained by 1966. The valuable extension services begun in the Second Plan in 54 teacher training institutions will be much expanded to bring new methods and help to secondary school teachers in surrounding areas.

University Education

The tremendous demand for college training has led to very rapid growth of India's colleges and universities.

At the end of the Second Plan, India will have 46 universities and about 1050 colleges, about double the number of ten years ago. The number of students (in arts, science and commerce) has increased by about 150 per cent over the last ten years—from 360,000 in 1951 to about 900,000 in 1961. By 1966, there will be about 1.3 million. These figures do not include the increasing number of young people going to engineering, medical and other professional and technical institutions.

One of India's real concerns is to raise educational standards in the face of this rising tide of students. A University Grants Commission was set up in the last years of the First Plan to improve the quality of university education. Its valuable efforts have included providing facilities for science teaching, encouraging even wider adoption of the strongly recommended three-year college degree course with its integrated liberalized curriculum, improving laboratories and libraries, providing for post-graduate studies and research, stimulating examination reform, improving teacher-pupil ratio, providing scholarships, loans and assistance for hostel and staff quarters and raising faculty salaries.

The Third Plan will continue these valuable efforts on an even larger scale, since it is expected that another 12 universities will be started over the Third Plan period and as

many as 70 to 80 new colleges opened every year. Evening colleges and correspondence courses will also be started to take care of additional students. Scholarships and other special measures will be provided to help encourage more women to enter college. At present less than a fifth of all college students are girls. Post-graduate facilities will be further expanded in both the sciences and the humanities to help provide more college-level teachers. In all colleges and universities, one of the main aims will be to expand facilities for the teaching of science, the purpose being to raise the proportion of science students for India as a whole to about 40 per cent in order to meet the increased demand in a number of different fields : science teachers for schools, students for engineering and other technical institutions, and scientists for industry.

A very real concern, however, is to divert some of the liberal arts and science and commerce students to technical and professional institutions, in part to relieve the pressure on the colleges, but even more to provide young men and women with the specific skills needed for their country's development. A key aim of the Third Plan is to set up adequate technical and professional training institutions. The Third Plan proposals for expanding this type of training, so important to the country's growth, were given in an earlier chapter.

New Scholarship Programme

India is now spending about $38 million (Rs. 18 crores) a year on various scholarship programmes for primary, secondary and college students. While many of these scholarships are for young people from backward classes including tribal groups, today about 16 per cent of all students in colleges and universities have some form of government scholarship or freeship.

Over the Third Plan, considerable funds, about $74 million, will be allotted for new scholarships for all groups.

A particular effort will be made to enable bright young students from every walk of life to complete their education both in secondary school and college, through a large programme of merit scholarships, carried out by the State and Central Governments. This will be in addition to the very sizable number of special scholarships and concessions (covering 6 to 7 million pupils in elementary and secondary schools alone over the Third Plan) provided for scheduled castes, scheduled tribes and other backward classes. It is also hoped to strengthen the administration of all scholarship programmes so that they take an increasing number of promising young people to the final stages of their education.

Adult Education and Literacy

Literacy has been increasing in India, although more slowly than was hoped. The new 1961 Census provisionally indicates that, as compared with 17 per cent literacy in 1951 for the population as a whole, today about 34 per cent of all men and 13 per cent of all women are literate. This is roughly an overall gain of perhaps 1 per cent a year over the decade.

The chief reason for the slow improvement is that India has not made much progress in adult literacy work. This work was taken up largely under the community development programme in a general community or "social education" effort, and has had less attention than other aspects of that programme. It is hoped to put increasing stress on adult literacy work as an essential part of rural development.

Educational Research and other Special Programmes

Over the past ten years, several national research institutions were set up to study "basic" education, audio-visual education, social and literacy education, text books and vocational guidance. These research groups are now to be

combined in a new high-level National Institute of Educational Research and Training, as an autonomous body covering a wide range of educational research and service programmes, and the training of key personnel. Reform of India's rigid examination system in secondary schools and colleges is also under study and experiments and research will now be carried on in all States. Efforts are also being made to coordinate work by the State and Central Governments to improve text books and lower their cost.

Other specialized programmes in the educational field that will be promoted over the Third Plan include physical education, education of the handicapped, enrichment of museums and other cultural activities and development of the national and regional languages. These latter programmes, like all of education, have a key role to play in strengthening national integration and a sense of national consciousness and equal citizenship among India's diverse and varied peoples who today are seeking their destiny for the first time as a unified nation.

2. *HEALTH*

Since Independence, India has pushed hard to improve health and health services for its people. The task is an enormous one, for pre-Independence India stood among the lowest in health standards of all countries in the world. But considerable progress, in some fields extraordinary progress, has been made.

One indication is that death rates for the population as a whole, and especially for mothers and children (once among the highest in any nation), have dropped markedly.* Average life expectancy is now estimated to have come up to about 42 years, compared to 32 years only a decade ago.

*The actual 1961 figures are: death rate : 21·6 per 1000 population, as compared with 25·9 in 1951; infant mortality: 135 per 1000 live births, compared with 154·6 in 1951; maternal mortality: 12·4 per 1000 live births, compared with 20 per 1000 in 1938.

A notable achievement in the past decade has been the nation-wide malaria control programme, which has so sharply cut the number of cases from this once widespread disease —from 75 million cases a year to about 10 million—that malaria can soon be completely eradicated. Another significant achievement is the setting up of a nation-wide rural health service which, through local health centres in the community development blocks, is bringing some elementary medical care to India's villages for the first time in the country's history.

A good beginning has been made, also for the first time, to provide that basic essential to health—safe drinking water —in rural areas and in many cities long without safe water supply systems. Hospital facilities and facilities for training medical and health staff have been greatly expanded, and public health work and public health engineering have started virtually for the first time. In spite of these gains, India still, of course, has a long way to go not only to approach the health standards of more advanced nations, but to meet minimum health needs, particularly in rural areas.

Third Plan Programmes

The Third Plan will carry on the many health programmes which have been started over the last decade and try to bring them to full efficiency and effectivenes. The Third Plan's particular emphasis will be on preventive public health measures—with priority on safe water supply especially in rural areas, on complete eradication of malaria and smallpox, and on improving rural health services. At least half the total health budget will go for these programmes. Because of the rapid rate of population growth shown by the new 1961 Census, family planning will have a very high priority as a health programme of greatest national importance and urgency.

The tentative total allotment for all health programmes in the Third Plan is $718 million (Rs. 342 crores), about 50 per cent more than in the Second Plan.

Rural Water Supply

Even with concerted efforts over these last ten years, there are still many rural areas without safe drinking water.

The aim during the Third Plan is to make safe drinking water available to as large a number of villages as possible throughout the country. This is clearly a difficult aim to achieve, and it will take intensive effort and coordination of many different agencies—such as the rural development programme, public health engineering services, the State and local governments—to achieve it. Altogether some $141 million (Rs. 67 crores) is allocated to rural water supply projects. Priority will go to backward areas and areas not yet covered by the full community development programme.

Urban Water Supply

Providing safe water supply to towns and cities is an urgent job in India, since few except the largest cities now have fully protected water systems. The job is primarily the responsibility of the local municipal governments. Because, however, of the rapid growth of the urban population, the Central Government has agreed to advance loans to enable municipal governments to carry out programmes for providing water and improving drainage.

About 660 city water supply projects, with an estimated cost of $235 million (Rs. 112 crores), were started in the Second Plan. These were designed to provide safe water supply to a total city population of 15 million. About two-thirds of these projects have been completed. Lack of technical personnel, pipes and other materials, as well as lack of organization have held up the rest. These remaining projects (numbering about 200) will have to be completed during the Third Plan period, and will take most of the funds earmarked for city water systems. Funds for new projects and the number of new ones that can be started are thus necessarily limited.

Primary Health Units, Hospitals and Dispensaries

In launching its rural health service with "primary" health centres in every rural development block, India has started what is already one of the largest rural health programmes in the world to serve its vast rural population.

The primary centres which include a dispensary and four to six hospital beds, and are intended to be staffed with a doctor, nurse-midwives and a sanitarian, are the focal point of the rural health service. Started in a small way in the First Plan period, by the end of the Second Plan 2800 such health centres had been established. The centres are tied into the community development movement, and will be set up in all development blocks, which will number 5000 by the end of the Third Plan and cover all of India.

While these centres bring India's villagers their first promise of medical care, they are still far too few for the people served. They have also had difficulties in getting their full complement of staff, because of the reluctance of trained medical personnel to serve in rural areas. The number of people served per doctor in the rural areas is five times that of the cities. Various expedients—incentive pay, and allowances of rural service, compulsory rural interneship and service, better quarters and amenities—are proposed to solve this serious problem.

While the number of hospitals and dispensaries and of hospital beds has increased—to 13,000 and 186,000 respectively—over the last ten years, during the Third Plan a strong effort will be made to increase the number. These facilities are particularly needed in rural areas, since today the large majority of hospitals are in towns and cities. It is hoped especially to increase the beds and facilities of district and sub-divisional hospitals and tie the primary health centres into them with the diagnostic and referral services badly needed.

Communicable Diseases

All of India's present programmes to control communicable diseases will be pushed more vigorously in the Third

Plan period; but the greatest emphasis will be put on eradicating malaria and smallpox, two of India's worst and most ancient scourges.

Malaria : Malaria control, the largest and the most important programme, was first begun as a nation-wide effort in 1953. Even earlier in the Second Plan, control had succeeded so well that it was agreed to convert the control programme into an eradication programme. The eradication of malaria has considerable significance, since in the past malaria has been responsible for much of the sickness and deaths in several parts of the country.

Smallpox : Because of vaccination campaigns carried on over recent years, smallpox has been on the decline. But seasonally there are outbreaks, and every five to six years a serious epidemic. An eradication programme will be launched over the Third Plan period, with mass vaccination intended to cover the entire population before the next cyclical epidemic period.

Tuberculosis : Recent surveys suggest that while fewer people now die of tuberculosis, the rate at which people get it remains more or less the same, both in cities and in villages. There are 5 million cases in India, of which possibly 1.5 million are infectious.

By the end of the Second Plan, India's national B.C.G. vaccination programme had covered 120 million people; another 100 million will be covered during the Third Plan. It is also proposed to increase the number of T.B. beds, and to work towards providing one T.B. clinic for about every million people.

Leprosy : India has about 2 million people suffering from leprosy, of whom 20 to 25 per cent are in the infectious stages. Today, besides facilities for special treatment, 135 centres for leprosy control have been established. By 1965-66, it is hoped almost to double this number. A large number of voluntary organizations and social workers will be associated with anti-leprosy work. Every hospital and

primary health centre in the endemic areas will be organized as a nucleus for leprosy control.

Cholera : Cholera has been endemic in India for a very long time and has been a source of infection to other countries. There are five acutely endemic areas, the most important being West Bengal and Orissa. Since India does not have adequate personnel, equipment and funds to provide pure water supplies immediately in all endemic areas, it will undertake a phased programme, concentrating first on West Bengal, now unhappily known as the home of cholera.

Other diseases : The Third Plan will intensify its present programmes for the control of venereal diseases, goitre, filaria and trachoma.

Public Health Services

Health education is one of the ways of making people change their health habits and is consequently very important in India. Health education bureaus have now been set up in most States, and studies on health habits have started. The Third Plan will stress the training of health education specialists, formation of health education units, organization of health education services, production of health education material, and school health and school-feeding programmes.

Training Facilities

India has steadily expanded its training facilities for medical and health personnel over the last ten years. The number of medical colleges has gone up from 30 in 1951 to 57 in 1961, enough to turn out 19,000 doctors during the Third Plan. But more medical colleges are needed and it is hoped to have 75 in being at the end of the Third Plan, graduating about 4800 doctors every year.

In spite of this increased number, there will still be only one doctor for every 6000 people, the ratio prevailing for the last ten years or even more. The main problem, how-

ever, continues to be the small proportion of doctors working in rural areas.

There is already a serious shortage of 2000 doctors adequately trained for teaching in the medical colleges and 2500 more teachers will be needed to meet the additional requirements of the Third Plan. Post-graduate courses in the medical schools will be expanded as rapidly as possible over the Third Plan to prepare more doctors for teaching posts.

For other types of health personnel, the shortage is even more acute. Training programmes are therefore being expanded for nurses, midwives, leprosy workers, tuberculosis nurses, health engineering personnel and pharmacists. Since 1951, the annual output of nurses has more than doubled. By 1966, the target is 4500 nurses graduating every year, and 7000 auxiliary nurse-midwives, but this is still far below the number India needs. Special funds are being given to improve the training under India's indigenous systems of medicine.

Family Planning

Family planning is a key programme for the Third Plan and subsequent Five Year Plans and will be undertaken not merely as a major development programme, but as a nation-wide movement which embodies a basic attitude towards a better life for the individual, the family, and the community. The objective—to stabilize the growth of population over a reasonable period—is at the very heart of all India's plans for development.

At the same time, family planning, especially in a traditional society, admittedly has many complex problems and results can only come over a period. From small beginnings during the First Plan, the programme has expanded so that, by early 1961, there were about 550 urban and 1100 rural family planning clinics, working under the general direction of the Central and State Family Planning Boards which have now been set up. There is also consider-

able research being done, under the Indian Council of Medical Research, on effective contraceptives, on educational, training and communications problems, and on demography. There has also been considerable training of personnel both in professional and voluntary organizations. A Third Plan allotment of $57 million (Rs. 27 crores), or six times as much as in the Second Plan, has already been made and may be raised to $105 million (Rs. 50 crores) as the organization of the programme is expanded and becomes able to use larger funds.

The Third Plan programme will include education and motivation for family planning, providing family planning services in clinics, health centres and hospitals, especially in rural areas; training of general medical and health personnel at all levels, as well as specialists in intensive short courses as necessary; rapid increase in India's as yet unsatisfactory rate of production of contraceptives, and every possible means will be used for distributing them; and continued research in every field from genetics to sociological problems involved in family planning and to development of suitable cheap contraceptives. By 1966, 8200 family planning centres will be set up—three-fourths of them in rural areas.

In carrying out this programme on a nation-wide scale, the main task will be to find effective solutions to basic problems and mobilize all available agencies for educational and extension work in support of family planning. Administrative arrangements in the Centre and States must be greatly strengthened to equip thousands of health centres with personnel, to develop and produce and distribute supplies, to enlist private physicians, local "indigenous" doctors, local midwives, and voluntary agencies in an educational and extension service campaign. All these are tasks of great size and complexity, and call for urgent careful planning from the lowest local level upwards. In addition to most careful organizational support from government, it

will demand the help of voluntary organizations of all kinds, whose work and support is vital to this crucial national endeavour.

3. *HOUSING*

Housing India's millions is a task of Himalayan proportions. Fortunately in the warm climate many simple structures give adequate shelter; nevertheless, in the villages, and particularly in the fast-growing cities, providing adequate, decent housing and minimum public facilities will clearly present serious difficulties for many years to come. In towns with a population of 20,000 or more the numbers have increased by over 40 per cent or 18.2 millions over the last decade, and in urban areas alone India today is short of 5 million homes—twice the shortage of ten years ago.

The rapid growth of population, especially in the towns and cities, suggests at least three general considerations for housing programmes during the Third Plan.

First, housing policies must be set in the larger context of the economic development and industrialization which are likely over the next two or three decades. Location and dispersal of industries, for example, will be of increasing importance in the solution of the housing problem. New needs will be even greater than the shortages in housing inherited from the past, large as these are.

In the second place, it is necessary to coordinate more closely the efforts of all the agencies concerned, whether public, cooperative or private. The need to prepare master plans for urban areas is urgent and becomes all the greater because they can serve as a means to bring together and get the fullest possible contribution from different agencies.

Finally, conditions have to be created in which all home-building programmes, whether public or private, will particularly serve the needs of the low-income groups.

During the First and Second Plans, the housing effort made by both government and private enterprise was on a

larger scale than ever before. Government programmes concentrated largely on housing for low-income groups and industrial workers, although more recently slum clearance and improvement, village housing, and land acquisition and development were given increasing emphasis. Later, a programme of land acquisition and development was started and the nationally-owned Life Insurance Corporation, in association with State Governments, began to grant loans for middle-income housing.

Third Plan Programmes

The main housing programmes over the Third Plan period will be those continued from the Second Plan : housing for low-income groups and for various industrial and plantation workers; slum clearance and improvement; and rural housing. There will however be special emphasis on land acquisition and development, and fresh and concerted efforts made to prepare master plans and regional development plans for major urban and industrial areas. The Third Plan has allotted to housing and urban development a total of $298 million (Rs. 142 crores). It is hoped to secure as much as $126 million (Rs. 60 crores) in State housing loans from the Life Insurance Corporation. Nearly half a million homes will be built under these programmes. This is in addition to such other housing as will be built under various other special government funds and agencies —through funds provided for backward classes or allocated by various ministries and public agencies to house their own employees. In all, these special programmes may put up about 900,000 additional homes.

While there is no estimate of the number of housing units that will be put up by private means, it is reckoned that private construction may total $2363 million (Rs. 1125 crores) as compared with $2100 million over the last five years. It has also been proposed that Housing Boards be set up by the Central and State Governments to help collect and channel loan funds to help middle income groups build their own homes.

Housing for Industrial Workers

A subsidized housing programme for industrial workers was begun by the Central Government in 1952 in which private employers, State and municipal governments and the workers themselves shared construction and rental costs with the help of Central Government loans. About 100,000 housing units have now been completed at a cost of $95 million (Rs. 45 crores). The scheme would have made greater progress if the rent, even with the subsidy, had not proved comparatively high for workers to pay. The programme has been reviewed and modified recently to provide more flexibility on types of housing and credit terms and encourage more participation by employers, so that the programme can make a more substantial contribution to the growing problem of housing industrial workers.

Housing for Low-Income Groups

Under the low-income housing programmes operated by the State Governments since 1954, government loans to individuals for about 85,000 houses have been provided. In the course of the Second Plan about 53,000 houses were completed. There is considerable demand for loans under this programme, especially in towns where developed sites are available. The main benefits have, however, so far gone to families in the upper brackets of the low-income groups, and it is proposed that about a third of the funds from government be earmarked to a greater extent for the very low-income groups in whose housing an element of subsidy is indispensable. The aim is to keep rents within $2 to $2.50 (Rs. 10-12) a month. About $42 million (Rs. 20 crores) in housing loans out of the total of $126 million to be made available by the Life Insurance Corporation may go for middle-income groups.

Slum Clearance and Improvement

As India's cities continue to swell in population, especially with the influx of job-seekers from the villages, the

problem of preventing the growth of slums, as well as of slum clearance and improvement, has become critical. Immediate short-term solutions are necessary as well as long-range planning.

Slum clearance was started in a small way over the Second Plan, and projects priced at $40 million (Rs. 19 crores) were started, designed ultimately to house over 58,000 families. Only about 18,000 homes have so far been completed. The delays resulted from problems of land acquisition, as well as from the reluctance of slum dwellers to move or to pay slightly higher though still subsidized rents in the new housing provided. In addition to planning for slum clearance, the recent policy therefore has been to stress improvement of existing slums, to relieve immediate acute distress through such measures as providing safe water, sanitation, adequate streets and lighting to the present slum colonies. Larger resources were provided as an immediate priority for six major cities*.

Over the Third Plan all cities with 100,000 population or more (India has 115 such cities) will be included in the slum clearance and improvement programme, with greater emphasis on providing minimum facilities to slum areas that may not be cleared in the near future.

Urban Planning

Over the past five years the need for urban and regional planning has become widely recognized in India as a basic factor in economic growth as well as social justice. Rapid population increases and the speed of industrialization in the cities have accentuated the need and with it the concern for long-range planning. Urbanization is inevitable, indeed a part of the process of economic growth, closely connected with the rise of industries as well as other factors. To offset the evils of urbanization, however, there are essential steps to be taken. One of these is to plan the location

*Calcutta, Bombay, Delhi, Madras, Kanpur and Ahmedabad.

of industries more specifically to avoid the intense congestion and the resulting social problems. As India sees it, the broad objective for the future is to locate new industries away from large and congested cities and stress planning of industrial regions as a whole, and in both urban and rural areas to diversify and balance the types and sizes of industry.

In addition, to offset the high social and economic cost of urbanization, the Third Plan urges that four major lines of action be undertaken over the next five years to set a proper course for the future. These are : to control urban land values through proper acquisition, development and sale of land; to prepare master plans to assure optimum use of land; to define tolerable minimum standards for public facilities and amenities; and to strengthen local municipal administration for undertaking new development responsibilities.

High land prices and land speculation raise the costs of housing and public services in urban areas. Specific measures to check the rise in land values are necessary; such as government acquisition and development of land, taxes on land transfers; and taxes on land held vacant; as well as ceilings on plot size and on the number of plots a single party may hold. The Third Plan has allocated $55 million (Rs. 26 crores) for land acquisition and development and expects 15,600 acres to be acquired.

The Third Plan has named over 45 cities and five "resources areas" where, because they are important and growing industrial and commercial centres or State capitals, master plans should be started in the Third Plan, or as early as possible in view of the limited number of town planning personnel available. Some Third Plan funds have been provided for assisting the State Governments in drawing up these plans. Delhi, one of the cities named, has already had its master plan drawn up, and Greater Calcutta begins its planning this year. Some other cities are expected to follow suit shortly.

Rural Housing

Improvement in village housing can help not only to raise the level of rural living but to broaden and transform rural outlook and opportunities. As such, rural housing programmes form a basic aspect of rural development as a whole.

The Second Plan made a small beginning in rural housing. A village housing programme, started in 1957, includes planning the layouts of selected groups of four to six cooperating villages, and individual home loans for up to two-thirds of the cost of construction, including the cost of land, subject to a maximum of Rs. 2000 per house.

About 3700 villages have been selected so far under the scheme, and plans have been drawn up for 1600 of them. Loans have been approved for over 15,000 new homes; 3000 are already built. Six research-cum-training centres have been established for the purpose of promoting research in improving building materials and construction techniques, and for training personnel required for village planning and State Governments' technical and engineering field staff. Under the Third Plan, the programme is to be linked more closely with the community development movement and work in close coordination with other rural improvement projects for roads, water supply, school and health facilities, etc. Greater attention will be given to the setting up of local brick kilns, manufacture of building components, extension of areas for building new houses and improvement of housing conditions for agricultural workers, especially the landless.

4. *LABOUR POLICY*

As yet relatively few of India's workers are in industry —less than 5 per cent, about 7½ million out of a total labour force of 165 million. The great majority of workers are engaged in farming. Most industrial workers moreover are in

relatively small industries. Only about 3 million are organized in labour unions.

Yet as India pushes ahead with industrialization in both public and privately owned plants, a fair labour policy is a very important aspect of development. Fair wages, improved working conditions, good labour-management relations, social and employment security, workers' education, a sharp rise in productivity—all these are basic to securing not only the rapid and peaceful growth of industry, but a fair deal for labour in the growth of the country as a whole.

The coming of Independence marked a new day for Indian labour, and India's Constitution gave long-needed recognition to their economic rights. Over the past ten years with the active participation and encouragement of the government, and in joint consultation with management and labour, a body of principles and practices has grown up that represents the common opinion of all major parties, and has the strength and character of a national, if voluntary, policy. Joint Committees (of labour, management and government) headed by a joint Indian Labour Conference have been set up to help shape and carry out policies.

The two aims of India's labour policy over the Third Plan, as in the past, are on the one hand to keep the industrial peace conducive to higher output, and on the other to assure a fair deal for workers. As India sees it, its industrial growth is not merely a question of production, but the good of all engaged in it.

To promote industrial peace over the years since Independence, the government has assumed responsibility for providing facilities for amicable settlement of disputes and outstanding disputes are referred to tribunals. It has also assumed powers of intervention if these methods fail. This system has helped check the growth of labour unrest and given workers benefits and security they might not otherwise have gained. But at the same time, the spirit of litigation grew and delays in legal settlements created wide dissatisfaction.

A new and more positive approach was therefore adopted, based on moral rather than legal sanctions. The emphasis today is on preventing unrest by timely action and by giving more concentrated attention to its basic causes.

A Code of Discipline in Industry was put into effect in mid-1958. It applies both to public and private enterprises and has been accepted voluntarily by all the Central organizations of employers and workers. The Code lays down specific obligations for both mangement and labour, with the object of promoting constructive cooperation between their representatives at all levels. The Code's intent is to avoid strikes as well as litigation, settle disputes and grievances by mutual negotiations and voluntary arbitration, encourage the free growth of trade unions, and eliminate all forms of coercion and violence in industrial relations. So far results are encouraging. There have been fewer strikes (other factors than the Code are also responsible for this) and a general improvement in the climate of industrial relations. The Code will continue to be the basis for industrial relations over the Third Plan. Greater awareness of the responsibilities and obligations on both sides is needed, as is greater emphasis on grievance procedures and on private voluntary settlements rather than on recourse to tribunals and adjudication.

Another step taken during the Second Plan was to develop Joint Management Councils as a form of workers' participation in management, to give to the workers a sense of "belonging" and to stimulate their interest in higher productivity. Twenty-three Councils have been set up so far. Their main function is to bring about mutual consultation between employers and workers over many important issues which affect industrial relations. Although they have been in operation only a short time and a more careful study of their working has to be made, the results so far have been heartening. A major programme of the Third Plan is to extend these Councils so that they become a normal feature of industry, both public and private.

Most industrial workers in India are either illiterate or have only fairly elementary schooling. During the Second Plan, the government initiated a programme of workers' education carried out through a semi-autonomous board. Run with the cooperation of all the employers' and workers' organizations, it has made a good start and is increasingly appreciated. Large-scale expansion of this education programme is proposed over the Third Plan.

Inter-union rivalry in India has had well-known and unhappy consequences. To some extent the Code of Conduct which was drawn up and accepted by representatives of workers' organizations two years ago, has helped lessen inter-union rivalries. It is hoped that with the spread of education among workers, trade union leaders will come more often from within the rank-and-file, rather than from outside, as is the case today. This education will then help the unions to adapt their outlook, functions and methods to today's needs and responsibilities. Unions may then expect to be a still more integral and responsible part of the industrial system.

Wages in major organized Indian industries are determined primarily by collective bargaining, arbitration, conciliation and adjudication. In some industries, tripartite wage boards have been given this responsibility. Both labour and management have agreed to accept unanimous decisions of the boards. Wage board proposals in respect of certain industries—cotton textiles, cement and sugar refining—are already being carried out. Wage boards have also been appointed for the jute and plantation industries and similar boards will be set up for the iron and steel industry and in such other industries as may be feasible.

India has minimum wages legislation for certain workers both in industry and agriculture. So far, because of inadequate enforcement, this law has not been effective in many cases, and the enforcement machinery needs strengthening.

Social security : There are two principal social security

schemes for factory workers. One is the Employees' State Insurance Scheme, a pioneer measure of social and health insurance for India. It now serves about 1.7 million workers and its coverage will be doubled over the Third Plan, to 3 million. In the centres now operating (there are about 100), medical benefits will be extended in all these centres to the workers' families. The other scheme is an Employees' Provident Fund, which now covers over 3 million factory workers in 58 industries. Over the Third Plan it will be extended to commercial firms and to a number of new industries which can bear the cost.

Working conditions : Various laws exist to protect the safety and welfare of industrial workers, but far better enforcement is needed. A National Mines Safety Council is proposed for the mining industry, where safety precautions, education and health protection are particularly necessary.

Employment exchanges : Over the Second Plan, India expanded its network of employment exchanges and hopes to have one in every district (about 300 in all) by 1966, and also make some start on rural employment exchanges.

Productivity : Low productivity has characterized much of Indian industry in the past. For India's full development, it is essential both to raise levels of worker productivity and to provide workers with better wages, living standards and working conditions. Without greater productivity, neither laws, industrial strife, nor government intervention can help the workers realize their aspirations for a better life.

In this important field of productivity, management has to give the lead in using efficient methods and machinery, providing good working conditions and training, and in eliminating all unjustifiable practices which now act as "disincentives" to workers.

Vital reforms cannot be secured without the goodwill and understanding of the workers. Incentives should be aimed at the group no less than the individual. It is hoped that industry, trade unions and government together can

ensure that every worker whether new or already on the job can receive adequate training to acquire the necessary skill and efficiency. Where new "rationalized" methods and machinery displace workers, providing re-training and transfer to other jobs will help create a favourable environment. Funds are being provided by the Third Plan for such re-training and replacement. India's National Productivity Council has helped work out a basis for cooperation on productivity, and a Code of Efficiency and Welfare is being considered.

Labour relations research, on which India has made a beginning, particularly over the last few years, will be constantly strengthened and expanded with the cooperation of labour, management, government and universities and research organizations. In the early stages of industrialization, research today can play an important part in shaping future labour policy and patterns.

5. *WELFARE PROGRAMMES*

Welfare of Backward Classes

In addition to its development programmes for the welfare of the nation as a whole, India must also give special attention to those groups which are backward or depressed or have special handicaps, in order to bring them up to the level of the rest.

Among these groups are India's tribal people, who number over 22.5 million* and have a traditionally rich and varied culture dating from ancient times. Another even larger group are the Harijans** (once called "untouchables") who today number nearly 55 million and most of whom are landless agricultural labourers. And there are other weak or backward classes for whom special development and welfare programmes are as yet necessary.

*1951 Census figure. 1961 Census data not yet available for tribal population.

***Harijan* means 'child of God', a name given by Mahatma Gandhi to those once called the untouchables.

Welfare programmes for these groups have been a consistent and significant part of India's Five Year Plans and are intended chiefly to give the additional aid necessary to help them overcome their special handicaps and make a rapid all-round advance integrated to the development of the country as a whole.

The success so far achieved is difficult to measure. What is clear is that the problem of raising the living standards of these groups is much more complex than had been realized earlier and calls for long sustained effort. Special safeguards embodied in India's Constitution for these backward groups have now been extended for another ten years. It is hoped that during this period, considerably more progress can be made in bringing these groups up to the level of the community as a whole, although the problem is one that has no easy and quick solution. The Third Plan will continue welfare programmes for these groups with particular emphasis on education and economic development. In all, Centre and State expenditures on all programmes for backward classes will total $239 million (Rs. 114 crores) over the Third Plan.

India's tribal people present a special and challenging problem. India believes that these people should be helped to develop according to their own particular genius, with full respect for their own traditional arts and culture and without pressure and imposition from outside. Further, any development programme for them should, as much as possible, be done through workers drawn from the tribal people themselves, and be specifically adapted to their needs.

The chief problem of the tribal people is to give them better economic and employment opportunities in their traditional work—forestary, hunting and fishing—and to encourage those who now practise shifting cultivation to adopt improved farming techniques and soil conservation measures. Efforts to prevent exploitation by outsiders of tribal lands and of fishing and hunting and forestry rights,

have not always worked well and need to be strengthened. Other needs of the tribal people are for health and medical facilities and for safe drinking water supplies. While over the past ten years roads and communications in the formerly isolated tribal areas have improved enough to be no longer an acute problem, more work must be done.

About 300 new tribal "development blocks", in addition to the 40 or so already started, will be placed in areas where tribal population is most concentrated; their work programmes and budgets are to be made flexible enough to adapt to local needs and concentrate chiefly on economic programmes, along with education and social services. All staff of these projects will be given special training for tribal work. Shortage of enough trained workers has so far been a handicap. Continued effort will be made to encourage co-operatives, especially among forest workers, and to provide safe drinking water and further health services. Tribal people have indicated they do not want alien "modern" housing, and it will not be pressed.

Education is a very important aspect of the development of tribal people and, in addition to the free primary schools to be provided throughout India, the Third Plan provides for scholarships and freeships for tribal youngsters for "middle" and secondary education and for technical training. Where big new industrial projects are being located in tribal areas, the tribal people are to be helped with training and education to make the transition to an industrial environment and employment without serious social disorganization.

Economic rehabilitation of the former so-called "criminal" tribes, though these are few in number, represents a special problem which will receive considerable direct government assistance and concern.

India's Harijans and other so-called depressed "scheduled" castes have both economic and social problems which require special attention. During India's Independence

struggle, especially under the leadership of Mahatma Gandhi, abolition of untouchability became an integral part of the social reform movement, and new India's Constitution forbade the practice of untouchability in any form. Considerable State and local legislation also has been enacted to assure the depressed groups fairer representation in government and other employment and in democratic bodies and agencies.

With the help of a growing public support, some of the more acute aspects of discrimination are passing and many of the social disabilities that remain are to a large extent due to economic backwardness. Since Independence, moreover, special programmes sponsored by the State and Central Governments, and through voluntary private organizations, have deliberately attempted to bring new and fairer opportunities to these long under-privileged groups. To a far larger extent than for tribal people, however, the welfare of these groups, who live intermixed with the general population, is bound up in the growth of the economy as a whole and a deeper sense of community responsibility. The Third Plan provides $84 million for special programmes for the scheduled caste groups.*

The two major efforts so far have been to spread education and provide better economic opportunities. Millions of children from these groups are now in primary or secondary schools, nearly 900,000 of them on special scholarships. Over the Second Plan, 40,000 were helped with scholarships to go to college.

Over the Third Plan such scholarships will be continued and expanded; but there is real concern that education be more diversified and vocational in content so that these students can fill the scientific, technical and professional jobs now held open for them by law rather than seek merely clerical employment. Further, scholarship programmes

*As compared to $15 million in the First Plan and $59 million in the Second.

need to be administered so they do not merely disburse funds but actively promote and follow up the education of the young people aided.

Economic help is of very great importance. Here agricultural programmes have had and will have priority, since that is the major occupation of these groups. Since almost all are landless, distribution of more land and better quality land, and provision of adequate farm loans and technical assistance to help develop the land are proposed. Providing housing and housing sites, especially for the sweepers, scavengers and tanners and for landless farm workers, who together make up the larger majority among Harijans, has already been an important part of the programme and will continue to be so. Private voluntary organizations devoted to Harijan welfare are also being given special assistance to help set up schools, training institutions and other programmes, as well as to educate public opinion.

Social Welfare

Over the recent years, social welfare programmes, many of them carried out by voluntary organizations with the assistance of the Central and State Governments, have developed as an integral part of India's planning. These programmes have included the welfare projects for rural women and children which were undertaken by the Central and State Social Welfare Boards and which for almost the first time brought village women some basic social and welfare services; care of orphaned and handicapped children, and of rescued and destitute women; after-care services for prisoners and delinquents, and other welfare schemes. Although in relation to India's need, the programmes were few and small, indeed, they have made an important contribution to India's welfare services. Moreover, in drawing large numbers of voluntary workers, especially women, into the field of creative social services, the community has been enriched and strengthened.

In India, the main burden of social work has necessarily to be borne by voluntary organizations. The Central Social Welfare Board, organized in 1953 as a semi-autonomous body, has assisted more than 6000 voluntary organizations, most of them concerned with women's and children's welfare, in carrying out social service programmes throughout the country. The Board also established 470 of the rural welfare projects for women and children, the majority of which were set up in coordination with the community development programmes. These will be continued over the Third Plan. About 1700 more rural welfare centres will be set up in project areas and run by local women's groups in the villages.

The Third Plan provides $59 million (Rs. 28 crores) for social welfare. Nearly half of this will go to programmes of the Central Social Welfare Board (including the extension welfare projects) and programmes of the 6000 voluntary agencies which the Board will assist by grants.

An additional $6 million will be spent on child welfare programmes, for the highest priority of the Third Plan social welfare activities will be child welfare. Most welfare work should, it is felt, have a child welfare bias. In each State a pilot welfare project for children will be undertaken to coordinate and expand social service available for children.

For persons suffering from physical or other handicaps, there will be a small beginning to help them get training, employment and some modest social security assistance. A systematic attack will be made on the problem of beggary, especially child beggary. Prevention of juvenile delinquency and suppression of immoral traffic will have priority among what India calls its "social defence" programmes. Voluntary agencies will also try to develop community services for assisting various groups as far as possible in their family and social settings instead of concentrating on residential institutional services.

Living conditions in the congested cities present many

and often acute social welfare problems. A programme of urban community development based on mutual self-help can do a great deal to improve these conditions. In recent years, a pilot project of this kind was started in Delhi, and has provided useful experience which is to be applied in other cities, beginning on a small scale to gain experience and train workers. Ahmedabad has already started such a programme.

Resettlement and rehabilitation of nearly 9 million refugees from Pakistan, most of whom came at the time of Partition in 1947, has been a large problem for India over the past decade. Over $500 million have been spent. Happily, for the most part today the major tasks of rehabilitating these displaced people are coming to an end. For resettlement and assistance for those who more recently have come into West Bengal from East Pakistan, $84 million have now been allocated, and it is hoped that over the Third Plan the major problems will have been resolved of helping these people build the foundation of a new life.

APPENDIX
THE STRUCTURE OF THE PLAN
(In crores of rupees at 1960-61 prices)

	Third Plan Investment				Total Expenditures by Government*			
	Public	Private	Total	% of total	Second Plan	% of total	Third Plan	% of total
Development of Agriculture ..								
Agriculture, Community Development, Minor Irrigation	660	800	1460	14	530	11	1068	14
Major and Medium Irrigation ..	650	**	650	6	420	9	650	9
Development of Industry ..								
Organized Industry and Minerals	1520	1050	2570	25	900	20	1520	20
Village and Small Industries ..	150	275	425	4	175	4	264	4
Development of Power and Transport								
Power	1012	50	1062	10	445	10	1012	13
Transport and Communications ..	1486	250	1736	17	1300	28	1486	20
Education, Social Services and Miscellaneous	622	1075	1697	16	830	18	1300	17
Inventories	200	600	800	8	—	—	200	3
	6300	4100	10400	100	4600	100	7500	100

*Expenditures by government include investment plus what are called "current outlays"—expenditures other than those classified as investment on programmes and projects, such as salaries, subsidies, etc. Current outlays for private enterprise cannot be calculated.

**Included under Agriculture and Community Development.

INDEX

Agricultural. *See also* Agriculture
Agricultural—
——development, investment during Third Plan, 84, 86, 175-76
——Development Finance Corporation, 189
——implements, 9, 178, 235
——production, 84, 86, 170, 174-76
——research, development of, 50, 251
——workers, improvement of housing conditions for, 293
Agriculture. *See also* Agricultural Agriculture, 4
——achievements in, 45, 47-50, 275
——and rural development personnel, need for, 162-64
——foreign exchange needs of, 130
——investment by private enterprise, 126
——in the Community Development Programme, 180-81
——modernisation of, 11
Airlines, expansion of, 99
Alkaline lands, reclamation of, 203
Alloy tool and special steels industry, 223-24
Aluminium, 49, 50, 60, 97, 224, 232
Ambar Charkha, 245
Animal husbandry research, development of, 50
Antibiotic drugs, 50, 230
Assam Oil Company, 248
Atomic——
——energy, 253-56
——materials, reserves of, 10
Automobile and ancillary industries, 49, 97, 226-27, 235

B

Backward and depressed groups, social welfare programmes of, 33, 57, 102, 286, 305-9
Backward areas, location of industries in, 150
Balance of payments, 128-29
Balanced regional growth, 149-50
Ball and roller bearings, 97, 235
Barauni Oil Refinery, 231, 252
Basic industries, development of, 40, 46-47, 64, 68-70
Bauxite, 10, 52, 96, 150, 224, 248
Betterment levy, legislation for, 202
Bhakra-Nangal Project, 260
Bhilai Steel Plant, 95, 150, 223
Bhoodan, 212
Bicycles, 12, 53, 72, 97, 225, 231, 236, 244
Bokaro Steel Plant, setting up of, 223
Broadcasting, 55, 99, 267, 275
Business management and administration, 165-66

C

Canada, aid during Third Plan, 138, 255
Capital gains tax, 34, 35, 40, 120
Capital goods—
——industries, 51
——shortages, 114
Castings and forgings, 225
Ceiling on holdings, 33, 208-9
Cement, 1, 97
——making machinery, 10, 225, 233
Census 1961, 14, 288
Ceramics, 239, 253
Cereals, target of production, 172
Chemical industries, development of, 50, 60 , 66, 96, 220, 227-30
Child welfare activities, 101, 310
Chittaranjan Locomotive Works, 44, 225-26
Cholera, control of, 101, 292
City milk supply systems, development of, 48
Civil air transport, 98, 267, 273-74
Coal, 10, 27, 44, 49-51, 76, 248-50
——mining machinery, 233
——washeries, 250
Cochin shipyard, construction of, 226
Colombo Plan, 56, 255
Commercial—
——crops, 171
——vehicles, 58, 99, 227, 235
Communicable diseases, 100, 291-93
Communications, 87, 98-99, 130, 274
Community development, programmes for, 92, 130, 149, 163, 181-86
Community listening sets, 53, 275
Consolidation of farm holdings, 212
Consortium of friendly countries, aid during Third Plan, 137-38
Consumer goods, 12, 49, 231
Consumers' cooperatives, 190
Contour bunding, 156, 203

Contraceptives, 294
Controls, direct, 76
Cooperative/Cooperatives, 76, 183, 187-92
Corporate income tax, 120
Cost reduction techniques, 124
Cotton—
——cloth (mill made), 46, 66, 75, 170, 240
——imports of, 66
——machinery, 233
——textile, 49, 70, 94, 133, 231
Council of Scientific and Industrial Research, 253
Czechoslovakia, aid during Third Plan, 138

D

Dairying, 194, 233
Death rate, 288
Decimal coinage, 263
Deficit financing, 56, 118, 124
Delinquents, after-care services for, 309
Depressed castes, 307-8
Desert lands, reforestation of, 204
Destitute women, care of, 309
Development—
——cost during First and Second Plans, 55,57
——councils, 254
Diamond deposits, development of, 252,
Diesel—
——engines, 49, 97, 225, 235
——oil, 231, 263
Direct developmental imports, 130-31
Directive Principles of Indian Constitution, 29
Displaced people, *see* Refugees
Doctors, increase of, 55, 164, 293-94
Drugs and pharmaceuticals, 38, 50, 230, 238, 253
Dry farming techniques, 91, 177, 203

E

Eastern Europe, trade with, 134, 252
Educated unemployed, number of, 155
Education, 4, 13, 33, 34, 54, 69, 99-102, 149, 153, 278-88
——basic, 281, 286
——compulsory, 280
——elementary, 280-82
——for scheduled caste groups, 309
——for tribal people, 307
——girls, 283, 285
——secondary, 282-84
Education—
——social, 286
——university. 284-85
Electric—
——cables and wires, 10, 49, 225, 236
——fans, 51, 133, 225, 236, 244
——meters (house service), 236
——motors, 236
Electrical—
——equipment, 44, 50, 66, 264
——goods, exports of, 134
——transformers, 236
Electricity, production costs of, 263
Electrification of towns and villages, 40, 98
Electronics, facilities for research in, 253
Employees' Provident Fund, 304
Employees' State Insurance Scheme, 304
Employment, 16, 32, 62, 68-69, 81, 102-3, 151-56
——exchanges, 304
Engineering—
——industries, 38-39, 49, 95, 220, 224-27
——personnel, 21, 100, 160-61
Enterprise, private, 36-41
Equal opportunities, creation of more, 69-70
European Common Market countries, 134
Excise taxes, 76, 120
Exports, 27, 129, 133-35

F

Fair wages, need for, 301
Family—
——income, spread of, 34
——planning, 55, 100, 102, 148, 165, 288, 293
Farm—
——credit cooperatives, 47
——extension service, 21, 34
——price policy, 34, 179
Fertilizer/Fertilizers, 8, 9, 47, 49, 59, 70, 91, 92, 96, 177, 228, 237
——central marketing organization of, 178
——imports of, 19, 67
Fifth Plan, 158, 283
Filaria, control of, 293
First Five Year Plan, 18, 45, 52, 55, 56, 74, 174, 248, 272, 275
Fiscal policy, 76
Fish/Fisheries, development of, 48, 195, 196
Five Year Plans, making of, 23

Food—
——holding prices of, 35
——increase in consumption per capita, 171
——industries, 240
——production, self-sufficiency in, 62, 65, 93, 132, 170
Foodgrains—
——imports of, 169
——production, 24, 46, 93, 169-70
——storage facilities for, 179
Foreign—
——assistance, 19, 56, 59, 67, 73, 118, 125, 136-39
——exchange, 220, 261, 263-64, 269, 274
——grants and loans, 57, 59
——private investment, 57, 135-36
Forest development, funds for, 48, 205
Forestry, 204
Fourth Plan, 143, 249, 283
France, aid during Third Plan, 138
Free compulsory education, 99
Fruit cultivation, development of, 48
Full employment, problem of, 151-55
Gandhi, Mahatma, 29, 151, 281, 308
Gases, power generation from, 262
Geo-thermal power, 262
'Gestation' period in industries, 58
Government—
——service, new employment expected in, 153
——trading by, 76
Gram Sabhas, 185
Gramdan, 212
Green manuring, introduction of, 47, 92, 177

H

Handicapped children, 102, 287, 309
Handicrafts, 243-46
Handloom and khadi, 245
Harijans. *See also* Scheduled Castes
Harijans, better life for, 33, 35, 148, 305, 307-9
Health, 287-94
——new employment expected in, 153
——programmes, Third Plan funds for, 288
——services, 54, 69, 149, 288-94
Heavy—
——electrical equipment, 237
——Electrical Plant, Bhopal, 150
——industries, government-owned, 40
——machinery, 44, 233
Hindustan Shipyard, Visakhapatnam 226
Hindustan Steel Limited, 144
Hoarding, discouragement of, 76
Hospitals, 3, 55, 291
Housing, 35, 55, 101, 126, 295-300, 309
Hydel power stations, 262-63

I

Imports, control of, 56, 129
Improved seeds and implements, supply of, 8
Income—
——and opportunity, more equality in, 31-36
——and wealth, reduction of inequalities in, 31-36, 63
——per person, increase in, 45, 60, 64, 81
Indirect taxes, need for, 120
Industrial. *See also* Industries; Industry
Industrial—
——Credit and Investment Corporation, 135
——estates, funds for, 40, 51, 97, 243, 245
——Finance Corporation, 136
——management, problem of, 143-46
——peace, promotion of, 301
——Policy Resolution 1956, 37-38
——production, 4, 44, 48, 59-60, 81, 94, 231
——workers, 300, 304
Industries. *See also* Industrial; Industry
Industries—
——and minerals, new employment expected in, 153
——consumer, 38
——heavy, 19
——import-saving and export-earning, 66-68
——investment in, 220
——rural, 34
Industry. *See also* Industrial; Industries
Industry, 4
——and minerals, government investment in, 94
——and minerals, private enterprise in, 86, 94, 221
——demand for power for, 260
——development proposed for, 93-97
——diversification of, 50, 134
——government enterprise in, 221
Indus Water Treaty Agreement, 132
Inequalities—
——lessening of, 69
——of land ownership, reduction in, 47
Infant—
——food, projects for producing, 194

Infant—
——mortality, 1, 287
Inflation, 74-77
Inheritance tax, 120
In-plant training, 161
Insecticides, 9, 70
Institute of Applied Manpower Research, 159
Intensive agricultural district programme, 92, 180-81
Intermediaries, abolition of, 208
International Development Association, aid from, 138
Inventories, 126
Investment Centre, 135
Iron—
——and steel, increase in output of, 44, 48, 60, 93-94, 222-23
——ore, 1, 10, 49-51, 97, 248, 251
Irrigation. *See also* Major Irrigation; Minor Irrigation
Irrigation, 4, 8, 44, 57, 69, 91, 176-77, 196-202
——and power, new employment expected in, 153
——projects, 47, 143,197-98, 201-2

J

Japan, aid during Third Plan, 138, 251
Job opportunities, creation of, 60
Jute, 11, 46, 66, 93, 172-73, 240

K

Kerala, anti-sea-erosion measures in, 199
Kerosene, 231
"Key village" projects, 193
Khadi, 245
Koyna Project, 260

L

Labour—
——force, 300
——intensive projects, 156
——management relations, 301
——policy, 301-6
——productivity, 124
——relations research, strengthening expansion of, 305
Land—
——acquisition and development funds for, 299
——allotment policy, 35
——drainage, use of manpower in, 69
——reclamation, programmes of, 177
Land—
——reform, 33, 47, 69, 206-13
——taxes, 122
Large and medium industry, 126, 130
Leprosy, control of, 292-93
Level of savings, raising of, 72
Licensing, government's control over,40
Life expectancy, average, 288
Life Insurance Corporation, 122, 297-98
Life Insurance Corporation, housing loans by, 296
Lignite deposits, Arcot, 150, 262
Literacy, increase in, 286
Livestock, 48, 192-96
Living standards, 74-77, 304
Local works projects, 34
Long-range planning, targets for 1976, 24-27
Low income groups, 35, 69, 101, 297
Luxury goods, imports of, 18

M

Machine—
——building industries, development of, 66, 224-27
——tools industry, 10, 49, 50, 94, 97, 227, 233
Machinery, 11, 27, 48, 94-95
Major ports, 53, 266
Malaria, 54, 100, 288, 291
Manganese, 10, 247-48
Medical—
——benefits, to workers' families, 304
——colleges, expansion of, 21, 55, 164, 292-93
——facilities, for tribal people, 306-7
Medicines, manufacture of, 12
Medium irrigation, direct foreign exchange needs, 130
Merit scholarships programme, 33, 161
Metallurgical industries, 220, 222-24, 253
Metals, export of, 11
Metric weights and measures, introduction of, 255
Middle—
——class, growth of, 30
——income housing, 101
Midwives, training programmes for, 293
Mineral development, 86, 126-27, 247-51
Mines, government-owned, 40
Minimum wages legislation, 303

Minor irrigation. *See also* Irrigation; Major irrigation
Minor irrigation—
——funds for, 199
——programmes for, 199-200
Monetary policy, 76
Monopolies, prevention of, 39

N

"Nagpur Plan" for road development, 269
National—
——Academy of Administration, Mussourie, 165
——apprenticeship programme, 161
——Development Council, 117
——farm extension, 46
——income, 60, 64, 80, 169-70, 204
——Laboratories, 253
——Productivity Council, 146, 165, 305
——Research Development Corporation, 254
——Shipping Board, 272
——Small Industries Corporation, 244
Natural resources, exploration and exploiting of, 51
Neiveli Integrated Lignite Project, 250-51
Newsprint, 51, 60, 239
Non-cereal foods, 169, 171-73
North America, increased exports to, 134
Nuclear—
——plants, generation of electric power through, 262
——power stations, 98, 263
Nunmati Oil Refinery, 231, 252
Oil—
——exploration and exploiting of, 51, 96, 251
——imports of, 19
——plants, generation of electric power through, 262-63
——reserves of, 10
Oilseeds, 46, 66, 75, 93, 172
Open market purchase of grains, 76

P

Panchayat Samitis, 184-85, 204
Panchayati Raj—
——and community development, 185
——legislation for, 184-85
Panchayats, 158
——funds for, 182
——in the Community Development programme, 182, 184
Panchayats—
——role in increasing farm production, 180
——soil conservation programmes through, 202-3
Passenger cars/coaches (railway), 225, 227, 234, 235
Personal income-tax, 120
Petroleum, 230, 239, 251
P.L. 480, 75, 112, 118
——Foodgrains and Farm Commodities Agreement, 138
——imports, 129
——supply of foodgrains under, 73
Planning Commission, 22-23
——committee studying income and wealth distribution, 35
Plant protection, programmes for, 179
Poland, aid during Third Plan, 138
Polytechnics, expansion of, 100, 160
Population, problem of, 13-16
Ports, 99
——and harbours, programmes for, 272-73
Post and telegraph offices, expansion of, 53, 99, 274
Poultry development, 95
Power, 52
——development of, 52, 259-63
——direct foreign exchange needs of, 130
——expenditure for generation of, 261
——future needs for, 263
——investment on, 87
——requirements in 1976, 259
——research, 264
——shortage, 52
——sources of, 261-62
——target, 98, 261
Price—
——controls, 35, 75-77
——index, rise in, 60
——policy, its effects, 176
Primary health centres, 290
Private—
——enterprise, large-scale, 36-37
——investments, 126
Producer goods, 49-50
Projects, problems of costs, 145
Public —
——cooperation, 148
——enterprise, development of, 40
——enterprises, 118, 123, 143
——health engineering, 288
——health services, 292
——works programmes, 69

Q

Quota restrictions, removal of, 134

R

Railway—
——Depreciation Reserve Fund, 268
——equipment, imports of, 19
——rolling stock and components, 234
Railways—
——administration of, 143-44
——contribution, 123
——development programme, 268-69
——expansion, 68, 266
——expenditure on, 267
——new employment expected in, 153
——traffic, increase in freight, 266
————increase in passenger, 266
Raw materials—
——imports of, 19
——shortage of, 51, 113
Rayon and staple fibre, 231, 240
Reactor—
——Apsara, 255
——Zerlina, 255
Reforestation, 68, 156
Refugees—
——expenditure on, 311
——rehabilitation of, 311
Regional planning, 299
Rents, laws regulating, 210
Research in science and technology, 253-55
Rice, 45, 171-72
Rinderpest eradication campaign, 193
River valleys, development of, 203
Road—
——building, 68, 156
——development, funds for, 270
——increase in freight moving by, 266
Roads, 269-71
——and road transport, expenditure on, 267
——20-year (1961-81) development plan for, 269
Rourkela Steel Plant, 65, 150, 223
Rural—
——areas, creation of jobs in, 153
——cooperatives, development, 186
——electrification, 52, 264-65
——employment exchanges, starting of, 304
——health service, 54, 101
Rural—
——housing, 55, 101, 301
——programmes, funds for, 45, 175
——public works programme, 68, 102, 155-56
——water supply projects, 290

S

Saline lands, reclamation of, 203
Savings, increase in the rate, 73, 114, 115, 123
Scheduled castes. *See also* Harijans
Scheduled—
——castes, 286, 309, 310
——tribes, 286-87, 308, 310
Scholarships, 253, 256, 285-86
School feeding programmes, 148, 292
Schools—
——elementary, expansion of, 54
——high, expansion of, 54
——higher secondary, 54, 283
——multi-purpose, 283
Scientific—
——and technical education, rising level of, 17
——and technological research, 52, 253-55
——instruments, 254
——personnel, need for, 162
——research, funds for, 253-54
——programmes of, 253-55
Scientists Pool, 162
Scooters, 227, 234
Second Five Year Plan, 12, 18, 45-47, 56-60, 73, 74, 81, 83, 113, 118, 120, 121, 124, 129, 132, 136, 152
Security of tenure, legislation for, 210
Seed farms, 47
Shipping—
——administration of, 143
——development, First Plan, 272
—— ——Second Plan expenditure on, 272
—— ——Third Plan programmes for, 271-72
——ports, etc., Third Plan government expenditure on, 267
——tonnage, increase in, 53
Silk production, 243, 246
Skilled—
——foremen, shortage of, 145
——supervisors, shortage of, 145
——workers, need for, 100
—— ——training of, 161
Slum clearance and improvement, 55, 55, 297
Small—
——industries, investment in, 242

Small industries, role in employment, 68, 153, 154
——————Service Institute, 51, 244
——————Service Institutes and Extension Centres, 161
——savings, 118, 122-23
——scale industries, 97, 242-24
Social—
——services, 54-55, 87, 99
——welfare, 148, 309-10
Socialist pattern of society, definition of, 28-30
Soil conservation, 9, 47-48, 91, 156, 175, 177, 202-4
Solar radiation, as source of electricity, 262
South America, developing economic relations with, 134
State—
——Family Planning Boards, 294-95
——Trading Corporation, 134
Statisticians, facilities for training, 165
Steel, 1, 19, 27, 38, 49, 50, 62, 66, 76, 97, 143, 218, 222, 232
Storage—
——equipment, need for, 70
——facilities, 76
Strikes, avoidance of, 302
Structural fabrications, 234
Sugar, 49, 70, 97, 225, 241
Sulphur-bearing pyrites deposits, exploitation of, 252
Sulphuric acid, 49, 97, 229, 237
Surgical instruments, 234
Switzerland, aid from, 138
Synthetic rubber, 239

T

"Take-off" point of an economy, 19
Tax—
——collection, improvement of, 120
——evasion, dealing with, 34
——laws, tightening of, 69
——revenues, ratio to national income, 121
——system, extension and improvement of, 34
Taxation—
——incentive, 40
——proportion of national income taken off as, 120
——proposals for Third Plan, 118-22
——revenues from, 121-22
Tea, 11, 66, 133
Teachers, need for, 100, 114
Teachers' training institutions, expansion of, 284
Technical—
——education, expansion of, 4, 54, 69
——institutions, expansion of, 285
——training of teachers for, 162
——training, 13
Techno-economic surveys, 150
Technological research, 253-56
Tenancy reforms, 33, 209-11
Textile—
——industries, investments in, 220
——mills machinery, 225
Tidal power, as source of electricity, 262
Tobacco, expansion of exports of, 93, 133, 171
Tool-building equipment, imports of, 19
Tourism, 267, 274-75
Traction, demand for power for, 260
Trade—
——and commerce, new employment expected in, 153
——unions, encouraging growth of, 301-2
——————securing social justice through, 35
Trained manpower for India's development, 155, 158
Transport, 4
——and communications, 266-74
——————investments in, 82, 86, 126, 267
——————new employment expected in, 153
——————progress in, 52-53
——direct foreign exchange needs of, 130
——enterprises, government-owned, 40
——facilities, increase in, 44
——growth of, 60
——targets of, 98-99
Tribal—
——areas, improvement of, 306-7
——people, assistance to, 33, 55, 69, 102, 305

U

Underemployed, number of persons 152
Underemployment, 12
Unemployment, 12, 60, 152
Union of Soviet Socialist Republics, 17, 134, 138, 222
United Kingdom—
——aid during Third Plan, 138, 222
——increased exports to, 134

United Nations, help in reclamation of desert lands, 204
United States of America, assistance by, 56, 73, 138
Universities—
——increase in the number of, 284-85
——securing social justice through, 35
University Grants Commission, 285
Uranium, 96, 252-53, 262
Urban community development, programme of, 101, 298-99, 311
Urbanization, offsetting evils of, 298-99

V

Vegetable—
——cultivation, development of, 48
——oils, 133, 231, 241
Veterinary—
——hospitals, expansion programmes for, 193
——science, teaching of, 54, 163
Village and small industries. *See also* Small industries
Village and small industries, 51, 130, 242-46
Village cooperative societies, 97, 123, 246
Vocational training, 149
Voluntary organisations, 35, 102, 148, 310

W

Wage boards, 303
Wages, workers', 303-4
Waste land, reclamation of, 47
Water—
——logging, preventive measures, 199
——power generation from, 262
——(safe drinking), provision of, 289-90
——transport (inland), development programmes for, 272
Waterways, expansion of, 99
West Germany, aid during Third Plan, 138, 222
Wet cultivation techniques, 9, 57, 177
Wind power, as source of electricity, 262
Women, increase in education among, 278
Wool development, 194-95, 240
Worker productivity, raising levels of, 304
Workers' education, 301, 303
Working conditions, need for improved, 301
World Bank, assistance by, 73, 90, 113

Y

Yugoslavia, aid during Third Plan, 138

Z

Zamindari, abolition of, 47

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